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MOSQUITOES.

AN UNUSUAL BREEDING PLACE.

Acting Assist. Surg. W. J. Stewart, on duty at La Guaira, Venezuela, reports that there had been a much larger number of mosquitoes than usual in the offices of the American consulate and that a careful search of the usual breeding places, including rain gutters, failed to reveal where they were breeding. There was in use in the office a water cooler of the type in which water from a large inverted bottle passes through a porcelain compartment surrounded by an ice chamber. One day in drawing off from the ice chamber some of the water resulting from the melting ice, mosquito larvæ were found in the water and on complete drainage of the ice chamber a considerable number of larvæ were found. The water and larvæ were inadvertently thrown away before the type of mosquitoes which had been breeding in this ice-cold water was determined.

The cleaning of the ice chamber and careful daily attention to it were followed by the total disappearance of mosquitoes from the offices.

THE TRANSMISSIBILITY OF PELLAGRA.

EXPERIMENTAL ATTEMPTS AT TRANSMISSION TO THE HUMAN SUBJECT.¹

By JOSEPH GOLDBERGER, Surgeon, United States Public Health Service.

There is a very widely held belief, at least in the United States, that pellagra is a communicable disease. The evidence in support of this is almost wholly indirect and consists, in the main, of certain analogies to infectious diseases presented by some features of its epidemiology. When critically examined one finds that this evidence either completely falls or that it is susceptible of an entirely different interpretation.² The only direct evidence in favor of this view that

¹ Read at the meeting of the Southern Medical Association, Atlanta, Ga., Nov. 16, 1916.

² A discussion of the literature is reserved for a later communication. In the meantime the reader will find the following of interest: Goldberger, 1915, Vedder, 1916, and Voegtlin, 1914.

calls for serious consideration is the report by Harris (1913), of New Orleans, of a successful inoculation of a monkey with a filtrate from pellagrous lesions.

The very extensive and comprehensive monkey inoculations by Lavinder and Francis (1914), like those of a number of other workers, including the later (unpublished) work¹ of Harris himself, have failed to confirm this report.

In order to throw further and, if possible, conclusive light on this subject the writer planned to test the question of the infectivity of the disease by experiment on an animal species known to be susceptible, namely, man himself.

This was made possible by the cooperation of a number of my colleagues and associates who, after being informed of the problem, freely volunteered to submit themselves to experiment. It was originally planned to carry out this test during 1915 concurrently with a test of the rôle of diet in the production of pellagra (Goldberger and Wheeler, 1915), to which a group of convicts were at that time being subjected. The pressure of other work, however, made it necessary to defer this phase of the investigation until the spring of the present year.

GENERAL CONSIDERATIONS.

Some 20 individuals volunteered to submit themselves to experimentation. It was not practicable, however, to utilize more than 16 of them. These included 1 woman.

They varied in age from 26 to 42 years. Four were 26 to 29, 9 from 30 to 39, and 3 from 40 to 42 years. Thirteen were physicians. They resided in various localities: Eight at Washington, D. C.; 1 at Columbia, S. C.; 2 at Spartanburg, S. C.; 1 at Milledgeville, Ga.; and 4 at New Orleans, La.

No restraint of any sort was imposed. They were advised to continue their customary habits of life and diet, and were permitted to travel freely in attending to their personal or official business.

No attempt was made to avoid "natural infection." Indeed, it should be noted that five of the volunteers by reason of their official duties came into frequent and intimate contact with pellagra in its natural environment. Three, including the woman, have come into known contact with cases of the disease, while four others have lived for considerable periods in a locality (New Orleans) where casual contact with the disease was at least a possibility.

In the appended list of the volunteers will be found the age, location of residence, and an indication of the experiment or experiments in which each participated.

¹ Communicated at a meeting of Louisiana health officers, New Orleans, July, 1915.

The materials used were blood, nasopharyngeal secretions, epidermal scales from pellagrous skin lesions, urine, and feces. The blood was administered by intramuscular or subcutaneous injection, the secretions by application to the mucosa of the nose and nasopharynx, scales, and excreta by mouth.

In order to reduce gastric acidity and thus minimize the possibly germicidal effect of the gastric juice, the ingestion of scales and excreta was preceded by a dose of from 10 to 20 grains of sodium bicarbonate. The ingesta were always taken on an otherwise empty stomach.

The materials whose infectivity was tested were obtained from 17 cases of pellagra of various types and of different grades of severity, including three fatal cases. A list is appended in which the pertinent data relating to each case are given.

The patients were seen and the experiments performed at different places. One, a fatal case, was seen at the Washington Asylum Hospital, Washington, D. C.; 1 at the Charity Hospital, New Orleans, La.; 3 at the State Hospital for Insane at Columbia, S. C.; and 12, including 2 fatal cases, at Spartanburg, S. C. The volunteers participating did not in all instances reside at the place where the experiment was performed, but assembled there at a specified time. This applies particularly to the experiments at Spartanburg, S. C.

As will appear from the details next to be presented, the infectivity of the blood was tested twice, of nasopharyngeal secretions twice, of scales three times, and by reason of the alleged controlling influence of methods of sewage disposal in the propagation of the disease the infectivity of both urine and feces was tested six times. Two or more of these tests were made on seven different occasions. In presenting the details of the experiments it seems best to consider the individual experiment under the group of which it formed a part on one of these seven occasions. The groups are considered in their chronological sequence. A tabular summary is appended.

DETAILS.

Experiment Group No. 1.

On April 25, 1916, blood and nasopharyngeal secretions were obtained from a patient (case No. 1) with a moderately acute first attack of the disease at the United States Pellagra Hospital, Spartanburg, S. C., and administered to two volunteers, G-J and W-GA.

(a) *Blood*.—The blood was drawn from a vein at one of the elbows, defibrinated, and 5 c. c. were injected without delay into the left deltoid of W-GA and 6 c. c. into that of G-J.

(b) *Secretions*.—Secretions were obtained by wiping out the nose and nasopharynx of the patient with a cotton swab and transferred

by at once rubbing this over the mucosa of the nose and nasopharynx of the volunteer. A separate swab was used for each.

Effects.—Both men felt some soreness and stiffness for a day or two in the muscle into which the blood was injected; otherwise nothing was observed.

Experiment Group No. 2.

On April 28, epidermal scales and urine were obtained from each of two patients and feces from a third at the State Hospital for Insane at Columbia, S. C.

Of the two patients furnishing both scales and urine, one (case No. 3) was a severe first attack and the other (case No. 4) a mild second attack. The patient furnishing the feces (case No. 2) was suffering from a severe attack and was having four soft bowel movements a day.

(a) *Scales.*—The scales were obtained by scraping the affected areas of the skin and, combined, weighed, it is estimated, about 0.1 to 0.2 gms.

(b) *Urine.*—The urine was a fresh catheter specimen in each case.

(c) *Feces.*—The feces specimen was obtained with the aid of a simple water enema and was liquid.

The scales with about 4 c. c. of each specimen of urine and with about the same quantity of the liquid feces were worked up into a pilular mass with wheat flour and in this form swallowed by volunteer G-J, 30 minutes after taking 20 grains of sodium bicarbonate and about 1 to 1½ hours after collecting. After swallowing this mass another dose of 20 grains of sodium bicarbonate was taken. The alkali was intended to reduce gastric acidity and thus perhaps favor infection.

Effects.—For several days after the ingestion of the foregoing materials this volunteer experienced some light epigastric fullness and eructations of gas after a meal. On the third day a diarrhea with frequent, painless, watery, and rather gaseous evacuations developed. The diarrhea lasted about a week. It was still present on May 7, on which date, as will presently appear, this volunteer participated in another experiment which included the ingestion of scales, urine, and feces.

Experiment Group No. 3.

On May 7 blood, nasopharyngeal secretions, scales, urine, and feces were obtained from some patients at the United States Pellagra Hospital, Spartanburg, S. C., and used for the inoculation of each of a group of five volunteers, G-J, S-E, T-WF., W-DG., and W-GA. A sixth volunteer, G-MHF., received blood only.

(a) *Blood*.—The blood was drawn from the general circulation of each of three patients, defibrinated and then pooled. Of this, 7 c. c. were injected subcutaneously into each of the six volunteers mentioned. The time elapsing between drawing and injecting the blood was under two hours.

To the pooled blood, one of the patients (case No. 5), with a mild ninth recurrent attack, contributed 10 c. c.; one (case No. 6), with a moderately acute second attack, 15.5 c. c.; and one (case No. 7), with a severe acute second attack, 20 c. c. The patients furnished, therefore, 1.5 c. c., 2.5 c. c., and 3 c. c., respectively, of defibrinated blood for the inoculation of each volunteer.

(b) *Secretions*.—Secretions were obtained from four patients and, after mixing, used for the inoculation of the five men above mentioned. One of the patients (case No. 1) was the same as the one that furnished the secretions for the first experiment (experiment group No. 1, (b)). The three others are cases No. 5, No. 6, and No. 7, already briefly characterized in describing the preceding blood inoculation.

The nose and nasopharynx of each of the four patients were carefully wiped out with a separate set of five cotton swabs. The secretions thus obtained were mixed by rinsing and soaking the swabs in some normal salt solution.

The inoculation was made by rubbing over the mucosa of each side of the nose and nasopharynx each of a set of three swabs soaked in the mixture just described. In this way a fresh set of six swabs was used for each volunteer. The time elapsing between collecting and inoculating was less than two hours.

(c) *Scales*.—Scales were freshly scraped from affected areas of skin of two patients, cases No. 1 and No. 7, previously characterized. Case No. 1 furnished 0.1 gm. and No. 7, 0.22 gm.

These were mixed and then divided approximately equally among the five volunteers each of whom swallowed his portion in the form of a "powder" about seven hours after they were collected and shortly after taking the dose of urine and feces next to be described.

(d) *Urine; feces*.—A specimen of urine and one of feces was obtained from each of the same three patients (cases No. 5, No. 6, and No. 7) as furnished the blood. In order to make sure of having the feces when wanted a simple water enema was used to get the specimens, none of which was diarrheal.

Ten cubic centimeters of urine and 5 grams of solid feces from each of the three corresponding specimens were worked up into a pilular mass with flour. About 15 minutes after taking 20 grains of sodium bicarbonate each of the five volunteers ingested an approximately equal portion of the mass. Each took therefore the equiva-

lent of about 2 c. c. of urine and 1 gram of feces from each of the three patients.

The urine and fecal specimens were between 3 and 9 hours old when ingested.

Effects.—About 10 days after the inoculation, one of the volunteers, T-WF, noted a slightly enlarged and somewhat tender lymph gland above the Poupart's ligament of the side of the abdomen that was the site of the blood injection. This gradually subsided. None of the other volunteers experienced any inconvenience, although, as will be recalled, one of them (G-J), on the date of this experiment, had not yet completely recovered from a rather marked attack of diarrhea following a previous ingestion experiment.

Experiment Group No. 4.

On June 7, 1916, urine and feces were obtained from a patient (female) at the Washington Asylum Hospital, Washington, D. C. The patient (case No. 8) had a typhoidal first attack, from which she died 10 days later (June 17, 1916).

The urine was a catheter specimen, drawn at 8.45 a. m., June 7.

The fecal matter consisted of two specimens; one, fairly liquid, was passed at about 9 p. m., June 6; the second, of soft puttylike consistency, was passed about 7 a. m., June 7.

Ten cubic centimeters of the urine, 1 gram of the first and 5 grams of the second fecal specimen were worked up into a pilular mass with cracker crumbs and a little flour. Gelatine capsules were filled, approximately equally divided, and at 12.30 p. m. ingested by five volunteers, C-RH, D-WF, McC-GW, G-J, and S-AM. Fifteen minutes before this, each volunteer took 10 grains of sodium bicarbonate.

Effects.—Some hours after ingesting the above one of the volunteers, S-AM, developed abdominal discomfort accompanied by abnormal, gaseous evacuations. The movements increased in frequency, developing into a marked diarrhea, which lasted about two weeks. He has been well since.

Another, McC-GW, experienced a little temporary gastric discomfort immediately after taking the material; nothing of note since.

None of the others of this group experienced any appreciable effects.

Experiment Group No. 5.

On June 8, 1916, another experiment was made with urine and feces from the patient (case No. 8) furnishing these materials for the preceding experiment, No. 7.

On this occasion the fecal matter consisted of three specimens. One of these, now 39 hours old, was passed at 7 a. m. June 7, and had

served in experiment No. 4; it had been kept at room temperature. The second was passed at 11.30 p. m. June 7, and the third at 7.15 a. m. June 8. Both of these latter specimens were liquid.

A urine specimen was drawn by catheter at 8.45 a. m. June 8.

Three grams of the first, 3 c. c. of the second, and 3 c. c. of the third fecal specimen, with 6 c. c. of urine, were prepared as in the preceding experiment, and at 12 o'clock equally divided among the three volunteers G-J, L-JP, and S-EA. Each received, therefore, the equivalent of 1 gram of each of the three fecal specimens and of 2 c. c. of the urine. About 20 minutes before taking this material each volunteer had taken 10 grains of sodium bicarbonate.

Effects.—Although two of these volunteers (L-JP and S-EA) had temporary attacks of looseness of the bowels immediately preceding the experiment, neither they nor the third who had participated in each of the preceding ingestion experiments experienced any inconvenience following the ingestion of this experimental material.

Experiment Group No. 6.

On June 13, 1916, urine and feces were obtained from a patient at the Charity Hospital, New Orleans, La. This patient (case No. 9) had a mild first attack.

The urine was obtained by catheter at 8 a. m. The stool, a liquid one, was passed at about 7.15 a. m., after a dose of magnesium sulphate.

Measured quantities of this material were prepared as in experiments No. 4 and No. 5 at 1.20 p. m. and ingested by five volunteers, A-CW, G-J, L-GB, M-MB, and W-CL, each one getting the equivalent of 2 c. c. of feces and 2 c. c. of urine. Twenty-five minutes before taking this material each volunteer took 20 grains of sodium bicarbonate.

Effects.—None of this group of volunteers experienced any appreciable effects.

Experiment Group No. 7.

On June 25, 1916, material was obtained at Spartanburg, S. C., for a final experiment.

(a) *Scales.*—Epidermal scales were scraped from pellagrous skin lesions of two patients (cases No. 14 and No. 17) at the United States Pellagra Hospital. They were not over four hours old when ingested.

(b) *Urine.*—Urine was obtained from three patients (cases No. 10, No. 11, and No. 12) at the county farm and from three (cases No. 14, No. 15, and No. 17) at the Pellagra Hospital.

(c) *Feces*.—Feces were obtained from four patients (cases No. 10, No. 11, No. 12, and No. 13) at the county farm and from three (cases No. 14, No. 15, and No. 16) at the Pellagra Hospital. Two of the fecal specimens were from patients (cases Nos. 12 and 13) with diarrhea.

The seven patients who furnished the material for this experiment were suffering from attacks of varying grades of severity (see list of pellagra cases), including two fatal cases (No. 12 and No. 13).

Measured quantities of the materials mentioned were worked up with cracker crumbs and a little flour into a pilular mass. Fifteen minutes after taking a dose of 20 grains of sodium bicarbonate this was ingested by each of the three volunteers, G-J, S-E, and W-GA, each taking the equivalent of about 4 milligrams of scales, 6 c. c. of urine (1 c. c. from each patient), and 8 grams of feces (2 grams from case No. 13 and 1 gram from each of the other six patients). The feces and urine were not over six hours old when ingested.

Effects.—Volunteer G-J, who participated in all of the preceding experiments and who as was noted had an attack of indigestion and diarrhea for about one week following the first ingestion experiment, experienced some mild dyspeptic symptoms for a number of days immediately after this.

Within two or three hours after the experiment volunteer S-E began to feel nauseated. The following morning he had three watery evacuations and 12 hours later a diarrhea began that lasted about a week. Nausea persisted for about the same period.

Volunteer W-GA had some slight ill-defined dyspeptic symptoms for about 24 hours following the experiment.

Aside from these immediate, temporary disturbances none of the volunteers has experienced any appreciable effects.

RESULTS AND CONCLUSIONS.

The first experiment was made on April 25 and the last on June 25, so that the volunteers have now (Nov. 16, 1916) been under observation for from four and one-half to six and one-half months, approximately. Observation has been maintained by association with a majority of the volunteers, by visits of inspection to the others, supplemented by reports from the volunteers themselves, or in the case of the laymen from medical officers with whom they are associated.

In four or five instances, as above noted, there were more or less marked immediate, but temporary, gastrointestinal reactions following, and, probably, due to the ingestion of the large doses of excreta. When one considers the relatively enormous quantities of filth taken the reactions experienced were surprisingly slight.

One of the volunteers, S-EA, had an attack of renal colic of eight to nine days' duration, from August 14 to August 22, 1916. Aside from this he, as well as the other volunteers, has enjoyed his usual health. None has developed any evidence justifying even a suspicion of pellagra.

It is not my present purpose to enter into a discussion of the etiology of pellagra. I may be permitted, however, to recall by way of contrast the result of the feeding experiment carried out last year (Goldberger and Wheeler, 1915). In that experiment, of 11 convicts subsisting on a one-sided diet, not less than 6 developed definite evidence of pellagra, while of over 30 controls not one showed any evidence that would justify even a suspicion of the disease.

It would appear, then, that while the opinion that pellagra is a communicable disease gains no support from the work here reported, the conclusion, elsewhere drawn (Goldberger, 1916), that it is a disease essentially of dietary origin, brought about by a faulty, probably "deficient," diet is materially strengthened.

SUMMARY.

Sixteen volunteers were subjected to experiment. With one exception all were men and varied in age from 26 to 42 years. No restraints were imposed on their customary habits or activities.

Seventeen cases of pellagra of various types and of different grades of severity furnished some one or more of the experimental materials.

The materials were blood, nasopharyngeal secretions, epidermal scales from pellagrous lesions, urine, and feces. Blood was furnished by 4 of the cases, nasopharyngeal secretions by 4, epidermal scales by 5, and urine or feces by 16, of whom 10 furnished both urine and feces, 3 urine without feces, and 3 feces without urine.

Blood was administered by intramuscular or subcutaneous injection; secretions by application to the mucosa of the nose and nasopharynx; scales and excreta by mouth.

Both urine and feces were ingested by 15 of the volunteers, 5 of whom also took blood, secretions, and scales.

The experiments were performed at four widely separated localities (Washington, D. C.; Columbia, S. C.; Spartanburg, S. C.; and New Orleans, La.), at which different groups of the volunteers were assembled.

Observation has been maintained by association with a majority of the volunteers and by visits of inspection, supplemented by reports from the volunteers themselves, 13 of whom are physicians, and by reports from other medical officers of the service with whom they are associated. During a period of between five and seven months none has developed evidence justifying a diagnosis of pellagra.

Tabular summary of experiments.

Date.	Locality.	Material.				Volunteer subject.	Remarks.	Result.
		Kind.	Source (case).	Amount.	Manner of administration.			
1916.								
Apr. 25	Spartanburg, S. C.	Defibrinated blood Nasophar. secretions.	No. 1 ...do.	5 c.c. (6 c.c.) (?)	Intramuscular injection. { Applied to mucosa of nose and nasopharynx.	(W-GA... { G-J... W-GA... { G-J...	{ The blood was injected intramuscularly within a few minutes after defibrination. Secretions obtained on cotton swab and at once rubbed over mucosa of subject. Fresh swab used for each subject. Scates taken as "powder." Feeces and urine made up into pillular mass with wheat flour and ingested. The quantities are minimal estimates. Interval 1 to 14 hours.	No. pel- lagra. Do.
Apr. 28	Columbia, S. C.	Scates Urine Feces	No. 3 and No. 4. No. 2.	0.1 to 0.2 gm. 8 c.c. 4 c.c.	Swallowed.	G-J...	Case No. 5 furnished 10 c.c., No. 6 furnished 15.5 c.c., and No. 7 furnished 20 c.c. of defibrinated blood. Of the pooled blood 7 c.c. were subcutaneously injected into each subject. The time between drawing and injecting the blood was under two hours.	Do.
		Defibrinated blood	No. 5, No. 6, and No. 7.	7 c.c.	(Subcutaneous injection.)	(G-J... S-MHF... S-E... T-WF... W-DG... { W-GA...	Secretions freshly obtained by swabbing out the nose and nasopharynx in each case with a set of 5 cotton swabs and soaking these in saline solution. These fresh swabs wet with this secretion were rubbed over nasal and nasopharyngeal mucosa of each volunteer. Interval less than 2 hours.	Do.
		Nasophar. secretions.	No. 1, No. 5, No. 6, and No. 7.	(?)	{ Rubbed into mucosa of nose and nasopharynx.	(G-J... S-E... T-WF... W-DG... { W-GA...	Case No. 1 furnished 0.1 gm. and No. 7, 0.22 gm. of freshly scraped scales. These were mixed and divided into five approximately equal parts and swallowed about 7 hours after they were collected.	Do.
May 7	Spartanburg, S. C.	Scales	No. 1 and No. 7.	0.06 gm.	Swallowed	(G-J... S-E... T-WF... W-DG... { W-GA...	Urine and feces rubbed up into a pillular mass with wheat flour. Each volunteer swallowed a portion representing 3 gms. of feces (1 gm. from each case) and 6 c.c. of urine (2 c.c. from each case). Urine and feces 3 to 9 hours old when swallowed.	Do.
		Urine Feces	No. 5, No. 6, and No. 7.	6 c.c. (3 gms.)	...do.	(G-J... S-E... T-WF... W-DG... { W-GA...		Do.

June 7	Washington, D. C.	{Urine..... {Feces.....	{No. 8.....	{2 c. c..... {1.2 gms.....	do.....	{(C-RH..... {D-WF..... {McC-GW..... {G-J..... {S-AM.....	Do.
June 8	do.	{Urine..... {Feces.....	{No. 8.....	{2 c. c..... {3 gms.....	do.....	{(G-J..... {L-JP..... {S-EA.....	Do.
June 13	New Orleans, La.	{Urine..... {Feces.....	{No. 9.....	{2 c. c..... {2 c. c.....	do.....	{(A-CW..... {G-J..... {L-JB..... {M-MB..... {W-CL.....	Do.
June 25	Spartanburg, S. C.	Scales..... {Urine..... {Feces.....	{No. 14 and No. 17..... {Nos. 10, 11, 12, 14, 15, 17..... {Nos. 10, 11, 12, 13, 14, 15, 16.....	{0.004 gm..... {6 c. c..... {8 gms.....	do.....	{(G-J..... {S-E..... {W-GA.....	Do.

Urine and feces worked up into a pilular mass with cracker crumbs and a little flour. The urine was not over 4 hours old when ingested; each volunteer received 2 c. c. The feces consisted of two specimens, one 15 hours and the other about 5 hours old. Of the former each volunteer took 0.2 gm. of the latter 1 gm. Urine and feces prepared with cracker crumbs and a little flour. Urine was 3 hours old. The feces included 3 specimens: one 39 hours old, the second 12 hours, and the third about 5 hours old. Each volunteer took 2 c. c. of urine and 1 gm. of each fecal specimen. Urine and feces prepared with cracker crumbs and flour. Urine was about 5 1/2 hours old. Feces were liquid, following saline purge. Each volunteer took 2 c. c. of urine with 2 c. c. of feces.

Scales, urine, and feces were worked up into a pilular mass with cracker crumbs. The scales were not over 4 hours old and each volunteer took about 0.004 gm. of the urine and feces were not over 6 hours old. Of the urine each volunteer took about 1 c. c. from each case; of the feces 1 gm. from each of six cases and 2 gms. from the seventh (case No. 13).

These experiments furnish no support for the view that pellagra is a communicable disease; they materially strengthen the conclusion that it is a disease essentially of dietary origin, brought about by a faulty, probably "deficient," diet.

ACKNOWLEDGMENTS.

My sincere thanks are due Dr. C. F. Williams, superintendent, Dr. W. C. Sandy, medical director, and Drs. D. W. Register and J. F. Munnerlyn, assistant physicians, of the South Carolina State Hospital for the Insane, for access to and for material from cases of pellagra. My thanks are due also to Drs. W. M. Barton and Reiss for material from a case at the Washington Asylum Hospital, Washington, D. C.; to Drs. I. I. Lemmon and C. Dean for material from a case at the Charity Hospital, New Orleans; to Dr. O. W. Leonard, of Spartanburg, S. C., for material from cases at the Spartanburg County Farm; and to Dr. R. M. Grimm for material and for assistance in carrying out some of the experiments at the United States Pellagra Hospital.

I have, finally, to make grateful acknowledgment of my indebtedness to those of my colleagues and associates of the service whose willing participation in a trying ordeal made this work possible.

Volunteers.

A-CV.—Medical officer, 26 years. Stationed at New Orleans, La. Participated in experiment No. 6.

C-RH.—Medical officer, 37 years. Stationed at Washington, D. C. Participated in experiment No. 4.

D-WF.—Medical officer, 32 years. Stationed at Washington, D. C. Participated in experiment No. 4.

G. J.—Medical officer, 42 years. Stationed at Washington, D. C. Major part of the time spent in field work in Southern States. Participated in all seven experiments.

G-MHF.—Housewife, 35 years. Resides at Washington, D. C. The only woman among the volunteers. Participated in experiment No. 3 at Spartanburg, S. C.

L-JB.—Medical officer, 28 years. Stationed at New Orleans. Participated in experiment No. 6.

L-JP.—Medical officer, 35 years. Stationed at Washington, D. C. Participated in experiment No. 5.

McC-GW.—Medical officer, 40 years. Stationed at Washington, D. C. Participated in experiment No. 4.

M-MB.—Technical assistant, 33 years. Stationed at New Orleans, La. Participated in experiment No. 6.

S-AM.—Medical officer, 39 years. Stationed at Washington, D. C. Participated in experiment No. 4.

S-E.—Statistician, 35 years. Stationed at Spartanburg, S. C. Participated in experiments No. 3 and No. 7.

S-EA.—Medical officers, 39 years. Stationed at Washington, D. C. Had an attack of renal colic August 14-22, 1916. Participated in experiment No. 5.

T-WF.—Medical officer, 28 years. Stationed at Columbia and Spartanburg, S. C. Participated in experiment No. 3.

W-CL.—Medical officer, 28 years. Stationed at New Orleans, La., up to September 12; at San Francisco after that date. Participated in experiment No. 6.

W-DG.—Assistant epidemiologist, 42 years. Stationed at Milledgeville, Ga. Participated in experiment No. 3.

W-GA.—Medical officer, 31 years. Stationed at Spartanburg, S. C. Participated in experiments No. 1, No. 3, and No. 7.

Pellagra Cases.

No. 1.

W-S.—White female admitted to United States Pellagra Hospital, Spartanburg, S. C., April 14, 1916. Hospital No. 191.

Salient clinical features.—Weakness, moderate skin lesions which first appeared April 7, 1916, moderate diarrhea.

Severity.—Rated by Dr. R. M. Grimm, the medical officer in charge, as a moderately acute first attack.

Experimental material.—Furnished blood and nasopharyngeal secretions on April 25 and epidermal scales and nasopharyngeal secretions on May 7.

No. 2.

M-FN.—White male, Ward 4, Columbia State Hospital, Columbia, S. C. Service of Dr. J. T. Munnerlyn. Admitted February, 1916.

Salient clinical features.—History of illness of two years. Insane. Presents marked seborrhea of nose and lips. Dermatitis on both elbows, with encircling "areola" on left. Has about four soft movements a day.

Severity.—Rated by Dr. Munnerlyn as a "severe" case.

Experimental material.—Furnished feces on April 28, 1916.

No. 3.

L-JL.—White female, Ward A12, Columbia State Hospital, Columbia, S. C. Service of Dr. D. W. Register. Admitted February, 1916.

Salient clinical features.—Mental manifestations, eruption, red tongue.

Severity.—Rated by Dr. Register as a "severe" first attack.

Experimental material.—Furnished epidermal scales and urine April 28, 1916.

No. 4.

M-MC.—White female, Ward A12, Columbia State Hospital, Columbia, S. C. Service of Dr. D. W. Register.

Salient clinical features.—Mental manifestations, extensive eruption. History of an attack in 1914.

Severity.—Rated by Dr. Register as a "mild" second attack.

Experimental material.—Furnished epidermal scales and urine on April 28, 1916.

No. 5.

E-EA.—White male, admitted to United States Pellagra Hospital, Spartanburg, S. C., May 5, 1916. Hospital No. 24, 24a, 24b.

Salient clinical features.—History of first attack in 1908; present is ninth attack and is said to have begun about April 15, 1916. Presents mild skin and minor nervous manifestations, marked weakness, constipated.

Severity.—Rated by Dr. Grimm as a mild, acute ninth recurrence.

Experimental material.—Furnished nasopharyngeal secretion, urine, feces, and blood on May 7, 1916.

No. 6.

O-I.—White female, admitted to United States Pellagra Hospital, May 6, 1916. Hospital No. 195.

Salient clinical features.—Weakness, moderately severe skin manifestations, moderate "nervousness," vertigo, mild salivation. History of first attack April, 1915.

Severity.—Rated by Dr. Grimm as a moderately acute second attack.

Experimental material.—Furnished nasopharyngeal secretions, urine, feces, and blood on May 7, 1916.

No. 7.

S-H.—White male, 8 years old. Admitted to United States Pellagra Hospital April 26, 1916. Hospital No. 193.

Salient clinical features.—Severe extensive skin manifestations, some of moist type. Mentally dull and depressed. History of a first attack in spring of 1915.

Severity.—Rated by Dr. Grimm as a severe acute second attack.

Experimental material.—Furnished nasopharyngeal secretions, blood, urine, and feces on May 7, 1916.

No. 8.

S-M.—White female, 48 years old. Admitted to Washington Asylum Hospital, Washington, D. C., April 27, 1916. Service of Dr. W. M. Barton; resident physician, Dr. Reiss.

Salient clinical features.—Mild skin manifestations, beefy tongue, diarrhea, involuntary evacuations, disoriented, typhoidal.

Severity.—A typhoid-pellagra, fatal; died June 17, 1916.

Experimental material.—Furnished two specimens of feces for experiment on June 7, 1916. One, fairly liquid, was passed at 9 p. m., June 6; the second, more nearly solid, at 7 a. m. June 7. Also a specimen of urine drawn at 8.45 a. m. June 7.

For the experiment of June 8, besides the second of the preceding fecal specimens, which was preserved at air temperature, this patient furnished two additional stools, both fluid, one passed at 11.30 p. m. June 7 and the other at 7.15 p. m. June 8. Also a specimen of urine drawn at 8.45 a. m. June 8, 1916.

No. 9.

B-M.—Colored male, 74 years. Admitted to Charity Hospital, New Orleans, La., June 11, 1916, ward No. 31, bed 405. Service of Dr. I. I. Lemmon; resident physician, Dr. C. Dean.

Salient clinical features.—Minor nervous manifestations, mild dermatitis, history of loose bowels.

Severity.—A mild first attack.

Experimental material.—Furnished feces and urine. Stool, liquid, after saline purge, passed about 7.15 a. m.; urine drawn at 8 a. m., June 13, 1916.

No. 10.

K-L.—White male, 11 years. Admitted to Spartanburg County Farm June 16, 1916. Service of Dr. O. W. Leonard.

Salient clinical features.—Extensive marked skin manifestations; mild gastrointestinal symptoms.

Severity.—A well-marked first attack of moderate grade.

Experimental material.—Furnished urine and feces June 25, 1916.

No. 11.

K-OB.—White male, 43 years. Admitted to Spartanburg County Farm June 16, 1916. Service of Dr. O. W. Leonard.

Salient clinical features.—Extensive severe skin manifestations; mild buccal and gastric symptoms; constipated.

Severity.—A well-marked first attack of medium grade.

Experimental material.—Furnished urine and feces June 25, 1916.

No. 12.

K-O.—White female, 9 years. Admitted to Spartanburg County Farm June 16, 1916. Service of Dr. O. W. Leonard.

Salient clinical features.—Extensive severe skin manifestations; marked diarrhea.

Severity.—A fatal first attack. Died August 25, 1916.

Experimental material.—Furnished urine and feces June 25, 1916.

No. 13.

S-JE.—White male, 37 years. Admitted to Spartanburg County Farm June 10, 1916. Service of Dr. O. W. Leonard.

Salient clinical features.—Has a history of pellagra extending over six to seven years; mental manifestations winter 1915-16.

Presents well-marked eruption; marked buccal and severe intestinal symptoms (watery diarrhea).

Severity.—A chronic pellagra, fatal. Died August 1, 1916.

Experimental material.—Furnished feces June 25, 1916.

No. 14.

J-M.—White female, 33 years. Out patient No. 43, United States Pellagra Hospital, Spartanburg, S. C. Came under observation June 19, 1916.

Salient clinical features.—Weak, tongue slightly red, constipated; moderately extensive, active eruption. History of attack in 1912 and 1915.

Severity.—Rated by Dr. Grimm as a moderately acute third recurrent attack.

Experimental material.—Furnished epidermal scales, urine, and feces June 25, 1916.

No. 15.

H-V.—White female, 21 years. Admitted to United States Pellagra Hospital, Spartanburg, S. C., June 24, 1916. Hospital No. 212.

Salient clinical features.—Presents moderately extensive, acute skin manifestations; mild mental symptoms (apathetic, confused). History of a first attack in June, 1915.

Severity.—Dr. Grimm rates this as a moderately acute second attack.

Experimental material.—Furnished urine and feces June 25, 1916.

No. 16.

S-S.—White female, 30 years. Admitted to United States Pellagra Hospital, Spartanburg, S. C., June 24, 1916.

Salient clinical features.—History of an attack, 1915, and of a recurrence in March, 1916, followed by improvement in April, but with retrogression during May and June. On admission felt weak, nervous, without nausea, but with burning and pain in stomach and with burning of feet. No other gastrointestinal manifestations. No eruption nor residuals of one.

Severity.—Mild second attack in post-eruptive stage (or in interval) with mild suggestive symptoms.

Experimental material.—Furnished urine and feces June 25, 1916.

No. 17.

Q-LV.—White female, 25 years. Admitted to United States Pellagra Hospital, Spartanburg, S. C., June 24, 1916. Hospital No. 216.

Salient clinical features.—Presents definite skin eruption and mild suggestive symptoms (nervousness, weakness).

Gives history of an attack in 1913 and of one in 1915.

Severity.—Rated by Dr. Grimm as a mild third recurrent attack.

Experimental material.—Furnished epidermal scales and urine June 25, 1916.

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MENTAL STATUS OF RURAL SCHOOL CHILDREN.

REPORT OF PRELIMINARY SANITARY SURVEY MADE IN NEW CASTLE COUNTY, DELAWARE, WITH A DESCRIPTION OF THE TESTS EMPLOYED.

By E. H. MULLAN, Passed Assistant Surgeon, United States Public Health Service.

At the request of the Delaware State board of health, State board of education, and Cooperative Educational Association, the United States Public Health Service undertook a sanitary survey of the rural schools of New Castle County, including the mental status of the school children. This survey is part of a series of cooperative investigations of educational, health, and sociological conditions in the State of Delaware by the Public Health Service, the National Bureau of Education, the Children's Bureau, and other agencies. In order to supply certain data desired by the Children's Bureau in their investigations, the mental survey herein reported was conducted preliminary to the general survey. It continued from January 6 to May 1, 1916.

During this investigation 3,793 children were studied. Of these, 19, or 0.5 per cent of the total, were found to be definitely feeble-minded and in need of careful supervision or institutional treatment. In addition, 50 other children, or 1.3 per cent of the total number examined, exhibited abnormal mental symptoms to such an extent as to be considered probable mental defectives.

At the beginning of this survey a majority of the school children were tested by the Binet-Simon scale, and those who showed symptoms of mental abnormality were examined by supplemental methods. The routine giving of the Binet tests to every pupil was soon replaced by a briefer sifting process for the purpose of finding those children of low intelligence or those in whom mental peculiarities existed. This brief examination was composed of questions and tests suited in a general way to the child's age and school grade.

If, during this preliminary examination or sifting process, symptoms arose which suggested mental abnormality, the case was examined more thoroughly. At this secondary examination every effort was made to arrive at a correct diagnosis in so far as one sitting would permit, and each suspected pupil was given Goddard's modification of the Binet tests, together with other tests and questions. This re-examination lasted from 20 to 50 minutes.

In the city¹ and town schools which were graded or partially graded, the children were questioned one at a time in the principal's office or other room. In practically all of the rural schools, however, the examination was conducted in the schoolroom in the presence of the teacher and pupils. When the weather became warm all the children were sent to the playground with the exception of those

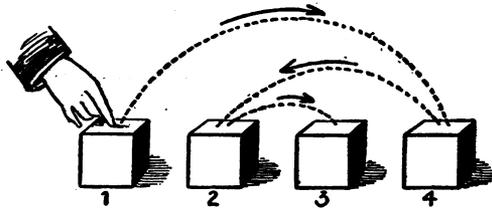
¹In the city of New Castle approximately 225 children were given the Binet-Simon examination.

Although 209 Binet examinations are a small number, this table shows the wide variation which exists in the Binet ages of children who are not considered defective.

SIFTING PROCESS.

On January 27 the sifting process replaced the routine Binet examination, beginning with the seventh grade of the New Castle School. The sifting method, and reexamining when necessary by the Binet and other methods, was continued throughout the survey.

The weeding out process was instituted simply to bring out the child's mentation in order that subnormal or abnormal suspects could be separated from the average children. It is believed, that almost any simple test or series of simple tests could be used for this purpose. After due consideration, the cube test, the repetition of digits, and problem were selected. These three tests, occupying



about four or five minutes, were thenceforth used in the examination of every child.

Cube Test.

The cube test, which has proved its usefulness in the mental examination of arriving immigrants, was the first test given to each child. This test consists in the touching of four or five cubes by the examiner in a definite order, immediately after which the subject strives to imitate the examiner, touching the same cubes in the same order.

In the diagram four cubes are represented. They are on a table immediately in front of the subject. The movement here depicted shows that the examiner is touching cube 1 with his finger, after which he immediately touches cube 4, then after a slight pause (one-half to two seconds) he touches cube 2, and immediately afterwards cube 3. The subject then imitates the examiner. The examiner next touches the four blocks in a different order, which operation in turn is executed by the subject.

The following six movements were selected for the four-cube test, the numbers indicating the different cubes:

First.....	1	4	2	3	Fourth.....	4	2	3	1
Second.....	1	3	4	2	Fifth.....	3	2	4	1
Third.....	1	3	2	4	Sixth.....	2	4	1	3

The execution of these six movements on the part of the examiner and the repetition of them by the subject ordinarily requires from 40 to 60 seconds. Two trials were allowed only for the first movement.

The following four movements were used in the five-cube test. The longer spaces between the digits indicate a time interval of from one and one-half to two seconds; in other words, a distinct pause occurred midway in the movement.

First.....	1	4	5	2	3	Third.....	5	1	3	4	2
Second.....	2	4	1	3	5	Fourth.....	4	3	5	2	1

In giving the cube test, a sufficient time mentally to recover was allowed after each movement. The weighted cubes used in the weight-discrimination test were used for this test.

During the cube test the subject was carefully observed. His general get-up, facial expression, amount of self-reliance, power of comprehension, muscular control, rapidity of movement, attention over a period of 45 seconds, emotional state, and accuracy of performance were all noticed.

The fourth movement of the four-cube test brought out the subject's power to resist suggestion, and the different movements of the five-cube test permitted analytic processes to take place. Good vision is essential for the performance of this test.

The five-cube test was used in the sixth, seventh, and eighth grades. Children of the lower grades were examined with the four-cube test.

Most of the children in the upper grades succeeded in performing two movements out of the four movements with the five-cube test, this being considered satisfactory. Whenever a subject succeeded in all four movements with the five-cube test his general examination record was usually excellent.

Ability to succeed in at least four movements out of the six movements with the four-cube test was considered a satisfactory performance. Satisfactory performances with this test are not accomplished until the child reaches the age of eight. This is proven by the tables inserted below. These show how 1,393 white children between the ages of 6 and 10 in the rural schools of New Castle County performed the four-cube test.

TABLE II.—*Four-cube test.*

Record of 1,393 white children in New Castle County, Del.

178 children, age 6.

14 children accomplished 6 movements)	} 64 children, or 36 per cent, succeeded in 4 movements.
20 children accomplished 5 movements)	
30 children accomplished 4 movements)	
28 children accomplished 3 movements)	
35 children accomplished 2 movements)	
19 children accomplished 1 movement.)	
32 children accomplished 0 movement.)	} 114 children.

TABLE II.—*Four-cube test*—Continued.*155 children, age 7.*

14 children accomplished 6 movements	} 85 children, or 63 per cent, succeeded in 4 movements.
36 children accomplished 5 movements	
35 children accomplished 4 movements	
16 children accomplished 3 movements	
14 children accomplished 2 movements	
12 children accomplished 1 movement.	} 50 children.
8 children accomplished 0 movement.	

147 children, age 7½.

23 children accomplished 6 movements	} 104 children, or 71 per cent, succeeded in 4 movements.
48 children accomplished 5 movements	
33 children accomplished 4 movements	
17 children accomplished 3 movements	
19 children accomplished 2 movements	
5 children accomplished 1 movement.	} 43 children.
2 children accomplished 0 movement.	

174 children, age 8.

40 children accomplished 6 movements	} 133 children, or 76 per cent, succeeded in 4 movements.
49 children accomplished 5 movements	
44 children accomplished 4 movements	
24 children accomplished 3 movements	
7 children accomplished 2 movements	
5 children accomplished 1 movement.	} 41 children.
5 children accomplished 0 movement.	

192 children, age 8½.

55 children accomplished 6 movements	} 150 children, or 78 per cent, succeeded in 4 movements.
52 children accomplished 5 movements	
43 children accomplished 4 movements	
31 children accomplished 3 movements	
9 children accomplished 2 movements	
1 child accomplished 1 movement....	} 42 children.
1 child accomplished 0 movement....	

170 children, age 9.

61 children accomplished 6 movements	} 131 children, or 77 per cent, succeeded in 4 movements.
47 children accomplished 5 movements	
23 children accomplished 4 movements	
23 children accomplished 3 movements	
12 children accomplished 2 movements	
4 children accomplished 0 movement.	} 39 children.

230 children, age 9½.

92 children accomplished 6 movements	} 211 children, or 92 per cent, succeeded in 4 movements.
77 children accomplished 5 movements	
42 children accomplished 4 movements	
13 children accomplished 3 movements	
5 children accomplished 2 movements	
1 child accomplished 0 movement....	} 19 children.

167 children, age 10.

51 children accomplished 6 movements	} 138 children, or 83 per cent, succeeded in 4 movements.
56 children accomplished 5 movements	
31 children accomplished 4 movements	
20 children accomplished 3 movements	
4 children accomplished 2 movements	
1 child accomplished 1 movement....	} 29 children.
4 children accomplished 0 movement.	

Repetition of Digits.

The repetition of digits followed the cube test. In giving this test the examiner gave the digits rather rapidly, allowing a small interval of time to occur midway in the enunciation of the digits. This small interval of time, less than a second, may be represented by a space in the following series: 179 286; 1395 847; 4792 3815. The tone of the examiner's voice in propounding this test may be characterized by the term "musical." The usual enunciation in monotone of each digit, recommended in textbooks on psychology, was not used.

With one exception, two trials were given for the repetition of each series of digits; that is, the subject was given two trials to repeat six digits, two trials to repeat eight digits, and so on, a different series of numbers being used. The exception above referred to is as follows: When a subject had reached the age of 12 he was given seven or eight trials, if necessary, to repeat seven digits. The time spacings between the different digits were varied at each trial. These variations may be thus represented: 179 2864; 1495 387; 59 17 28 4.

If a child of 12 or over was unable to repeat seven digits after several trials, the examiner would say to him:

Just listen. Do not say these numbers to yourself. Say them quickly to me as soon as I finish.

This is a test in sound. If you stop to think of these numbers you will lose them. Just say them quickly to me.

Every effort was made to get the child of 12 years and above to repeat seven digits. It was found that among the children examined the failure of those of 12 and over to repeat seven digits was a symptom in many instances of mental deficiency. As a rule, it was found that children thus failing made a poor showing in many of the other mental tests. A number of mentally defective persons who were able to repeat six digits at first soon tired in their effort to repeat seven, became inattentive, and later were unable even to repeat six.

The following tables show the digit repeating ability or memory span of 3,488 children examined in New Castle County. One girl, age 14, repeated 13 digits. No other pupil was able to repeat 12 digits. Seven children, six girls and one boy, repeated 11 digits. These were the best records made during this test. The colored children did relatively better work in repeating digits than they did in the other sifting tests. These tables show that children between the ages of 7 and 11 can repeat six digits.

TABLE III.—*Repetition of digits.*

White children of New Castle County, Del.; 1,612 boys examined; 1,429 girls examined.

<i>73 boys, age 15 and above.</i>		<i>79 girls, age 15 and above.</i>	
	Digits.		Digits.
1 boy repeated.....	10	1 girl repeated.....	10
8 boys repeated.....	9	7 girls repeated.....	9
23 boys repeated.....	8	23 girls repeated.....	8
22 boys repeated.....	7	31 girls repeated.....	7
16 boys repeated.....	6	15 girls repeated.....	6
2 boys repeated.....	5	1 girl repeated.....	5
1 boy repeated.....	4	1 girl repeated.....	4
<i>58 boys, age 14½.</i>		<i>56 girls, age 14½.</i>	
1 boy repeated.....	10	5 girls repeated.....	10
6 boys repeated.....	9	8 girls repeated.....	9
20 boys repeated.....	8	11 girls repeated.....	8
22 boys repeated.....	7	25 girls repeated.....	7
8 boys repeated.....	6	6 girls repeated.....	6
1 boy repeated.....	5	1 girl repeated.....	4

TABLE III.—*Repetition of digits*—Continued.

White children of New Castle County, Del.; 1,612 boys examined; 1,429 girls examined—Continued.

<i>74 boys, age 14.</i>		<i>59 girls, age 14.</i>	
1 boy repeated.....	11	1 girl repeated.....	13
4 boys repeated.....	9	3 girls repeated.....	10
28 boys repeated.....	8	7 girls repeated.....	9
28 boys repeated.....	7	15 girls repeated.....	8
11 boys repeated.....	6	22 girls repeated.....	7
1 boy repeated.....	5	9 girls repeated.....	6
1 boy repeated.....	4	2 girls repeated.....	5
<i>92 boys, age 13½.</i>		<i>95 girls, age 13½.</i>	
4 boys repeated.....	10	2 girls repeated.....	11
10 boys repeated.....	9	5 girls repeated.....	10
29 boys repeated.....	8	7 girls repeated.....	9
38 boys repeated.....	7	31 girls repeated.....	8
11 boys repeated.....	6	32 girls repeated.....	7
		17 girls repeated.....	6
		1 girl repeated.....	5
<i>98 boys, age 13.</i>		<i>91 girls, age 13.</i>	
4 boys repeated.....	10	1 girl repeated.....	11
10 boys repeated.....	9	3 girls repeated.....	10
24 boys repeated.....	8	9 girls repeated.....	9
38 boys repeated.....	7	29 girls repeated.....	8
21 boys repeated.....	6	35 girls repeated.....	7
1 boy repeated.....	5	10 girls repeated.....	6
		4 girls repeated.....	5
<i>101 boys, age 12½.</i>		<i>76 girls, age 12½.</i>	
6 boys repeated.....	9	1 girl repeated.....	10
34 boys repeated.....	8	4 girls repeated.....	9
44 boys repeated.....	7	25 girls repeated.....	8
17 boys repeated.....	6	32 girls repeated.....	7
		12 girls repeated.....	6
		2 girls repeated.....	5
<i>89 boys, age 12.</i>		<i>86 girls, age 12.</i>	
1 boy repeated.....	10	1 girl repeated.....	11
6 boys repeated.....	9	8 girls repeated.....	9
19 boys repeated.....	8	24 girls repeated.....	8
46 boys repeated.....	7	28 girls repeated.....	7
16 boys repeated.....	6	21 girls repeated.....	6
1 boy repeated.....	4	3 girls repeated.....	5
		1 girl repeated.....	4
<i>83 boys, age 11½.</i>		<i>91 girls, age 11½.</i>	
4 boys repeated.....	10	1 girl repeated.....	11
8 boys repeated.....	9	2 girls repeated.....	10
11 boys repeated.....	8	5 girls repeated.....	9
36 boys repeated.....	7	16 girls repeated.....	8
21 boys repeated.....	6	29 girls repeated.....	7
3 boys repeated.....	5	33 girls repeated.....	6
		4 girls repeated.....	5
		1 girl repeated.....	4
<i>81 boys, age 11.</i>		<i>82 girls, age 11.</i>	
6 boys repeated.....	9	3 girls repeated.....	10
18 boys repeated.....	8	2 girls repeated.....	9
31 boys repeated.....	7	18 girls repeated.....	8
24 boys repeated.....	6	34 girls repeated.....	7
2 boys repeated.....	5	24 girls repeated.....	6
		1 girl repeated.....	5
<i>109 boys, age 10½.</i>		<i>77 girls, age 10½.</i>	
1 boy repeated.....	10	2 girls repeated.....	10
5 boys repeated.....	9	3 girls repeated.....	9
17 boys repeated.....	8	11 girls repeated.....	8
47 boys repeated.....	7	30 girls repeated.....	7
35 boys repeated.....	6	28 girls repeated.....	6
2 boys repeated.....	5	3 girls repeated.....	5
2 boys repeated.....	4		
<i>89 boys, age 10.</i>		<i>79 girls, age 10.</i>	
1 boy repeated.....	9	2 girls repeated.....	10
9 boys repeated.....	8	3 girls repeated.....	9
33 boys repeated.....	7	18 girls repeated.....	8
42 boys repeated.....	6	29 girls repeated.....	7
2 boys repeated.....	5	23 girls repeated.....	6
2 boys repeated.....	4	4 girls repeated.....	5
<i>131 boys, age 9½.</i>		<i>101 girls, age 9½.</i>	
2 boys repeated.....	9	3 girls repeated.....	9
16 boys repeated.....	8	15 girls repeated.....	8
50 boys repeated.....	7	36 girls repeated.....	7
54 boys repeated.....	6	42 girls repeated.....	6
8 boys repeated.....	5	5 girls repeated.....	5
1 boy repeated.....	4		

TABLE III.—*Repetition of digits*—Continued.

White children of New Castle County, Del.; 1,612 boys examined; 1,429 girls examined—Continued.

<i>89 boys, age 9.</i>		<i>78 girls, age 9.</i>	
1 boy repeated.....	10	2 girls repeated.....	9
5 boys repeated.....	8	12 girls repeated.....	8
30 boys repeated.....	7	23 girls repeated.....	7
44 boys repeated.....	6	37 girls repeated.....	6
9 boys repeated.....	5	2 girls repeated.....	5
		2 girls repeated.....	4
<i>101 boys, age 8½.</i>		<i>88 girls, age 8½.</i>	
1 boy repeated.....	10	1 girl repeated.....	10
2 boys repeated.....	9	2 girls repeated.....	9
10 boys repeated.....	8	7 girls repeated.....	8
38 boys repeated.....	7	29 girls repeated.....	7
35 boys repeated.....	6	37 girls repeated.....	6
13 boys repeated.....	5	10 girls repeated.....	5
2 boys repeated.....	4	2 girls repeated.....	4
<i>97 boys, age 8.</i>		<i>71 girls, age 8.</i>	
2 boys repeated.....	9	6 girls repeated.....	8
5 boys repeated.....	8	15 girls repeated.....	7
27 boys repeated.....	7	42 girls repeated.....	6
46 boys repeated.....	6	7 girls repeated.....	5
14 boys repeated.....	5	1 girl repeated.....	4
3 boys repeated.....	4		
<i>69 boys, age 7½.</i>		<i>82 girls, age 7½.</i>	
1 boy repeated.....	9	2 girls repeated.....	10
1 boy repeated.....	8	6 girls repeated.....	8
16 boys repeated.....	7	17 girls repeated.....	7
41 boys repeated.....	6	45 girls repeated.....	6
7 boys repeated.....	5	11 girls repeated.....	5
3 boys repeated.....	4	1 girl repeated.....	4
<i>69 boys, age 7.</i>		<i>66 girls, age 7.</i>	
2 boys repeated.....	8	1 girl repeated.....	9
11 boys repeated.....	7	2 girls repeated.....	8
41 boys repeated.....	6	18 girls repeated.....	7
12 boys repeated.....	5	36 girls repeated.....	6
2 boys repeated.....	4	8 girls repeated.....	5
1 boy repeated.....	3	1 girl repeated.....	4
<i>100 boys, age 6.</i>		<i>72 girls, age 6.</i>	
1 boy repeated.....	9	1 girl repeated.....	8
11 boys repeated.....	7	10 girls repeated.....	7
43 boys repeated.....	6	28 girls repeated.....	6
35 boys repeated.....	5	21 girls repeated.....	5
17 boys repeated.....	4	11 girls repeated.....	4
1 boy repeated.....	3	1 girl repeated.....	3
1 boy repeated.....	2		
Colored children of New Castle County, Del.; 202 boys; 245 girls.			
<i>21 boys, age 15 and above.</i>		<i>21 girls, age 15 and above.</i>	
	Digits.		Digits.
1 boy repeated.....	10	1 girl repeated.....	9
2 boys repeated.....	9	8 girls repeated.....	8
6 boys repeated.....	8	8 girls repeated.....	7
9 boys repeated.....	7	4 girls repeated.....	6
3 boys repeated.....	6		
<i>12 boys, age 14½.</i>		<i>9 girls, age 14½.</i>	
1 boy repeated.....	10	3 girls repeated.....	9
2 boys repeated.....	9	2 girls repeated.....	8
3 boys repeated.....	8	3 girls repeated.....	7
6 boys repeated.....	7	1 girl repeated.....	6
<i>6 boys, age 14.</i>		<i>7 girls, age 14.</i>	
3 boys repeated.....	8	1 girl repeated.....	8
3 boys repeated.....	7	3 girls repeated.....	7
		3 girls repeated.....	6
<i>11 boys, age 13½.</i>		<i>12 girls, age 13½.</i>	
3 boys repeated.....	8	5 girls repeated.....	8
5 boys repeated.....	7	4 girls repeated.....	7
3 boys repeated.....	6	3 girls repeated.....	6
<i>5 boys, age 13.</i>		<i>9 girls, age 13.</i>	
2 boys repeated.....	8	1 girl repeated.....	9
1 boy repeated.....	7	4 girls repeated.....	8
1 boy repeated.....	6	3 girls repeated.....	7
1 boy repeated.....	5	1 girl repeated.....	6

TABLE III.—*Repetition of digits—Continued.*

Colored children of New Castle County, Del.; 202 boys; 245 girls—Continued.

<i>11 boys, age 12½.</i>		<i>13 girls, age 12½.</i>	
5 boys repeated.....	8	2 girls repeated.....	8
2 boys repeated.....	7	6 girls repeated.....	7
3 boys repeated.....	6	5 girls repeated.....	6
1 boy repeated.....	5		
<i>14 boys, age 12.</i>		<i>22 girls, age 12.</i>	
1 boy repeated.....	10	1 girl repeated.....	11
5 boys repeated.....	8	2 girls repeated.....	9
3 boys repeated.....	7	4 girls repeated.....	8
4 boys repeated.....	6	7 girls repeated.....	7
1 boy repeated.....	5	8 girls repeated.....	6
<i>15 boys, age 11½.</i>		<i>20 girls, age 11½.</i>	
4 boys repeated.....	8	2 girls repeated.....	9
9 boys repeated.....	7	4 girls repeated.....	8
1 boy repeated.....	6	7 girls repeated.....	7
1 boy repeated.....	4	6 girls repeated.....	6
		1 girl repeated.....	5
<i>10 boys, age 11.</i>		<i>15 girls, age 11.</i>	
1 boy repeated.....	10	4 girls repeated.....	8
1 boy repeated.....	9	7 girls repeated.....	7
6 boys repeated.....	7	2 girls repeated.....	6
2 boys repeated.....	6	1 girl repeated.....	5
		1 girl repeated.....	4
<i>14 boys, age 10½.</i>		<i>17 girls, age 10½.</i>	
4 boys repeated.....	8	3 girls repeated.....	8
4 boys repeated.....	7	10 girls repeated.....	7
6 boys repeated.....	6	4 girls repeated.....	6
<i>9 boys, age 10.</i>		<i>12 girls, age 10.</i>	
1 boy repeated.....	8	1 girl repeated.....	9
1 boy repeated.....	7	2 girls repeated.....	8
6 boys repeated.....	6	3 girls repeated.....	7
1 boy repeated.....	5	6 girls repeated.....	6
<i>15 boys, age 9½.</i>		<i>12 girls, age 9½.</i>	
2 boys repeated.....	8	2 girls repeated.....	8
8 boys repeated.....	7	6 girls repeated.....	7
5 boys repeated.....	6	4 girls repeated.....	6
<i>5 boys, age 9.</i>		<i>17 girls, age 9.</i>	
1 boy repeated.....	8	1 girl repeated.....	9
2 boys repeated.....	7	5 girls repeated.....	7
2 boys repeated.....	6	9 girls repeated.....	6
		2 girls repeated.....	5
<i>10 boys, age 8½.</i>		<i>9 girls, age 8½.</i>	
2 boys repeated.....	8	1 girl repeated.....	8
7 boys repeated.....	6	4 girls repeated.....	7
1 boy repeated.....	5	4 girls repeated.....	6
<i>9 boys, age 8.</i>		<i>16 girls, age 8.</i>	
3 boys repeated.....	7	7 girls repeated.....	7
4 boys repeated.....	6	8 girls repeated.....	6
2 boys repeated.....	5	1 girl repeated.....	5
<i>12 boys, age 7½.</i>		<i>6 girls, age 7½.</i>	
1 boy repeated.....	8	2 girls repeated.....	7
4 boys repeated.....	7	3 girls repeated.....	6
3 boys repeated.....	6	1 girl repeated.....	5
4 boys repeated.....	5		
<i>15 boys, age 7.</i>		<i>15 girls, age 7.</i>	
1 boy repeated.....	8	1 girl repeated.....	9
1 boy repeated.....	7	1 girl repeated.....	8
10 boys repeated.....	6	3 girls repeated.....	7
3 boys repeated.....	5	9 girls repeated.....	6
		1 girl repeated.....	5
<i>8 boys, age 6.</i>		<i>13 girls, age 6.</i>	
8 boys repeated.....	6	4 girls repeated.....	7
		6 girls repeated.....	6
		2 girls repeated.....	5
		1 girl repeated.....	3

Problems.

During the sifting process, the examiner propounded a problem in mental arithmetic to each child. Two trials were allowed.

Children of the sixth, seventh, and eighth grades were given the same kind of problems (each child being given the 30-cent problem, the three-fourths problem, and the two-fifths problem). When the child failed in the three-fourths problem, however, the last one was not given. These problems were as follows:

Thirty-cent problem: "If you have 30 cents and go to the post office and buy two 2-cent stamps, two 1-cent stamps, and two postal cards, how much money will you have left?" Or, "If you have 30 cents and go to the post office and buy three 2-cent stamps, three 1-cent stamps, and three postal cards, how much money will you have left?"

These problems may be thus expressed:

$$30 \text{ cents} - (2 \text{ 2's} + 2 \text{ 1's} + 2 \text{ p's}) = ?$$

$$30 \text{ cents} - (3 \text{ 2's} + 3 \text{ 1's} + 3 \text{ p's}) = ?$$

$$30 \text{ cents} - (4 \text{ 2's} + 4 \text{ 1's} + 4 \text{ p's}) = ?$$

$$30 \text{ cents} - (5 \text{ 2's} + 5 \text{ 1's} + 5 \text{ p's}) = ?$$

$$30 \text{ cents} - (6 \text{ 2's} + 6 \text{ 1's} + 6 \text{ p's}) = ?$$

Three-fourths problem: "If three-fourths of a farm cost \$600, what will the whole farm cost?" Or, "If three-fourths of a farm cost \$1,200, what will the whole farm cost?" and so on.

Two-fifths problem: "If two-fifths of a farm cost \$800, what will one-half of the same farm cost?" "If two-fifths of a farm cost \$1,200, what will one-half of the same farm cost?" "If two-fifths of a farm cost \$2,400, what will one-half of the same farm cost?"

In the fifth grade, the fraction problems were not used, the 30-cent problem alone being given. In the fourth grade the 20-cent problem was used:

Twenty-cent problem: "If you have 20 cents, and go to the post office and buy two 2-cent stamps and two 1-cent stamps, how much money will you have left?"

These problems may be thus represented:

$$20 \text{ cents} - (2 \text{ 1's} + 2 \text{ 2's}) = ?$$

$$20 \text{ cents} - (3 \text{ 1's} + 3 \text{ 2's}) = ?$$

$$20 \text{ cents} - (4 \text{ 1's} + 4 \text{ 2's}) = ?$$

$$20 \text{ cents} - (5 \text{ 1's} + 5 \text{ 2's}) = ?$$

$$20 \text{ cents} - (6 \text{ 1's} + 6 \text{ 2's}) = ?$$

In the third grade the 20-cent problem was given in a simpler form:

Twenty-cent problem (third grade): "If you have 20 cents and spend 2 cents for bread and 2 cents for butter, how much money will you have left?" In each case the base number, 20, was retained, thus:

$$20 \text{ cents} - (2+2) = ?$$

$$20 \text{ cents} - (3+3) = ?$$

$$20 \text{ cents} - (4+4) = ?$$

$$20 \text{ cents} - (6+6) = ?$$

In the second grade the 10-cent problem was used:

$$10 - (1+1) = ?$$

$$10 - (2+4) = ?$$

$$10 - (3+3) = ?$$

$$10 - (5+2) = ?$$

$$10 - (5+3) = ?$$

$$10 - (1+5) = ?$$

The children in the first grade were given the finger problem:

Finger problem: "I have five fingers (the examiner holding up his left hand and showing the five fingers), and if I take a knife and cut off these two fingers, how many fingers will be left on that hand?" Variations may be thus represented:

$$5-2=?$$

$$5-1=?$$

$$5-3=?, \text{ etc.}$$

These problems throw light on the reasoning and learning ability of the children, as well as upon the quality of teaching they have received.

The sifting process, or examination by means of the cube test, memory span, and problem, was given to all the children of New Castle County, with the exception of about 215 in the schools of the city of New Castle.

SECONDARY EXAMINATION.

Nature.

If at the primary examination symptoms of mental abnormality occurred, the case was gone into more thoroughly. At the reexamination a Binet examination was made which occupied 20 minutes. Some other tests and questions were also propounded as the examiner deemed necessary. Some of these were:

Reading.

Spelling.

Questions on general information suited to the subject's environment.

Cube test.

Days of the week backward.

Months backward.

Spelling backward.

Counting backward.

Interpretation of pictures upside down.

Arithmetic { Addition series.
Problems.

Counting money.

Telling time.

The subject was further tested by teaching him arithmetical processes step by step, grounding him first in concrete relationships and afterwards in abstractions. His ability to see into, catch on, retain, and improve was carefully observed. This testing was planned to throw light upon the subject's attention, memory, learning power, reasoning ability, and emotional state. In many cases considerable information in regard to his intelligence and emotional state was obtained in this way. In addition to the above tests, questions were put to the subject as thought feasible, in order to bring to light the whys and wherefores regarding his attitudes, interests, habits, emotional states, and health. His ordinary judgment or common sense was always inquired into. A physical examination was made

when necessary, special attention being directed to the vision, hearing, and neurological side.

Brothers and sisters of the suspect as well as his teacher and principal were questioned. This was done in order to find data which would bear upon the past medical history, school history, and family history of the suspect.

In addition, the character of the teaching which the child had received, together with the general tenor of the class or school, was considered.

The age, sex, and especially the race of the child was constantly kept in mind.

Results.

As a result of this survey a group of 19 mentally defective children are presented. These cases are distinctive and positive. There are also 50 cases to which the term "suspicions of mental deficiency" is applied. Eight epileptics were found during the survey. Finally, there is a group of peculiar children which may be designated as the psychopathic group. No attempt was made to study this group minutely.

TABLE IV.—*Abnormal children I.*

19 MENTAL DEFECTIVES.

Case.	Race.	Sex.	Age.	Grade.	Binet age.
1.....	Colored.....	Male.....	18 years.....	Ungraded.	7.2
2.....	do.....	Female.....	17 years, 8 months.....	I	6.2
3.....	White.....	do.....	16 years, 8 months.....	V and VI	8.6
4.....	do.....	do.....	15 years, 8 months.....	III	7.4
5.....	do.....	do.....	14 years, 6 months.....	I	5.8
6.....	do.....	Male.....	14 years, 2 months.....	I	7.4
7.....	do.....	Female.....	14 years.....	VII	7.2
8.....	do.....	Male.....	13 years, 7 months.....	IV	9.8
9.....	do.....	do.....	13 years.....	IV	7.2
10.....	do.....	Female.....	12 years, 11 months.....	II	9.4
11.....	do.....	Male.....	12 years, 5 months.....	II	8
12.....	do.....	Female.....	11 years, 6 months.....	II	3
13.....	do.....	Male.....	11 years, 1 month.....	Ungraded.	3.2
14.....	do.....	do.....	10 years, 5 months.....	I	6.4
15.....	do.....	do.....	10 years.....	I	4.6
16.....	do.....	do.....	9 years.....	I	4
17.....	Colored.....	do.....	do.....	Ungraded.	5
18.....	White.....	Female.....	do.....	I	5
19.....	Colored.....	do.....	8 years, 11 months.....	I	5

50 MENTAL DEFECTIVES (SUSPICIOUS).

20.....	Colored.....	Male.....	16 years, 10 months.....	I	7.2
21.....	White.....	Female.....	16 years, 11 months.....	VI	10.6
22.....	do.....	Male.....	16 years, 1 month.....	VI	11
23.....	do.....	do.....	15 years, 7 months.....	V	11.2
24.....	do.....	do.....	15 years, 4 months.....	V	9.4
25.....	do.....	do.....	15 years.....	VI	9.4
26.....	do.....	Female.....	14 years, 7 months.....	V and VI	10.2
27.....	do.....	Male.....	14 years.....	VII	9.8
28.....	do.....	Female.....	do.....	V	9.6
29.....	do.....	do.....	13 years, 11 months.....	IV	8.8
30.....	Colored.....	Male.....	13 years, 10 months.....	IV	10.2
31.....	White.....	do.....	13 years, 9 months.....	V	10.4
32.....	do.....	Female.....	13 years, 7 months.....	V	9.2
33.....	do.....	Male.....	do.....	IV	9.4
34.....	do.....	Female.....	13 years, 6 months.....	IV	9.6
35.....	do.....	do.....	13 years, ½ month.....	IV	10.6
36.....	do.....	Male.....	13 years.....	III	8.6
37.....	do.....	Female.....	12 years, 11 months.....	III	7.6
38.....	do.....	Male.....	12 years, 10 months.....	I	7.6

TABLE IV.—*Abnormal children I—Continued.*
50 MENTAL DEFECTIVES (SUSPICIOUS)—Continued.

Case.	Race.	Sex.	Age.	Grade.	Binet age.
39.....	White.....	Male.....	12 years, 6 months.....	IV	8.4
40.....	Colored.....	do.....	do.....	I	7
41.....	White.....	do.....	12 years, 5 months.....	IV	10
42.....	do.....	do.....	12 years, 4 months.....	VI	11.4
43.....	Colored.....	Female.....	12 years, 3 months.....	.....	8.8
44.....	do.....	Male.....	12 years, 2 months.....	I	8.6
45.....	White.....	do.....	12 years, 1½ months.....	III	8.6
46.....	Colored.....	Female.....	12 years.....	II	7.8
47.....	do.....	do.....	do.....	I and IV	9.8
48.....	do.....	do.....	11 years.....	.....	8.8
49.....	White.....	do.....	do.....	II	8
50.....	do.....	Male.....	10 years, 5 months.....	I	6.6
51.....	do.....	do.....	do.....	I	7.4
52.....	do.....	Female.....	do.....	II	8.8
53.....	do.....	Male.....	10 years.....	I	6.4
54.....	do.....	Female.....	do.....	I	7.2
55.....	do.....	do.....	9 years, 9 months.....	.....	8.2
56.....	do.....	do.....	do.....	I	7.4
57.....	Colored.....	Male.....	9 years, 7½ months.....	I	7.8
58.....	White.....	do.....	9 years, 6 months.....	I	7.2
59.....	do.....	do.....	9 years.....	II	6.8
60.....	do.....	do.....	do.....	II	.....
61.....	do.....	do.....	do.....	II	6.3
62.....	Colored.....	Female.....	do.....	I	7.2
63.....	White.....	Male.....	8 years, 7 months.....	I	5.8
64.....	do.....	do.....	8 years, 3 months.....	I	6.4
65.....	do.....	do.....	7 years, 10 months.....	I	4
66.....	do.....	Female.....	7 years, 6 months.....	P	4.4
67.....	Colored.....	do.....	7 years, 2 months.....	P	4.4
68.....	White.....	do.....	6 years, 5 months.....	P	4.2
69.....	do.....	Male.....	6 years.....	I	4.6

8. EPILEPTICS.

70.....	Colored.....	Male.....	18 years, 7 months.....	VI	11.0
71.....	White.....	do.....	14 years, 6 months.....	V	10.6
72.....	do.....	Female.....	14 years, 2 months.....	III	9.6
73.....	do.....	Male.....	13 years, 11½ months.....	VIII	11.2
74.....	do.....	do.....	12 years, 6 months.....	VI	11
75.....	do.....	do.....	11 years.....	II	8.8
76.....	Colored.....	do.....	10 years.....	I, II, III	7.4
77.....	do.....	Female.....	7 years, 5 months.....	I	7.2

9. SUBNORMAL CHILDREN WHO GIVE A HISTORY OF ATTACKS OF UNCONSCIOUSNESS.

78.....	White.....	Male.....	16 years, 6 months.....	V	9.4
79.....	do.....	do.....	15 years, 3 months.....	VI	11.2
80.....	do.....	do.....	13 years, 11 months.....	VI	11
81.....	Colored.....	do.....	13 years, 6 months.....	V	10.2
82.....	White.....	do.....	12 years, 6 months.....	IV	9.6
83.....	do.....	Female.....	11 years, 3½ months.....	IV	9.2
84.....	do.....	do.....	10 years, 6 months.....	III	9.2
85.....	do.....	do.....	9 years, 8 months.....	.....	7.4
86.....	do.....	Male.....	6 years.....	I	5.6

PECULIAR CHILDREN.

87.....	White.....	Male.....	14 years, 10 months.....	VII	11.8
88.....	do.....	do.....	14 years.....	IV	10.4
89.....	do.....	do.....	13 years.....	IV	.....
90.....	do.....	Female.....	12 years, 8 months.....	.....	.....
91.....	do.....	do.....	12 years, 6 months.....	III	10.2
92.....	do.....	do.....	do.....	IV	11
93.....	do.....	do.....	12 years, 4 months.....	VI	9.8
94.....	do.....	do.....	12 years.....	V	10.4
95.....	do.....	do.....	11 years, 10 months.....	IV	8.4
96.....	do.....	do.....	11 years, 2 months.....	III	9.2
97.....	do.....	Male.....	9 years.....	III	8
97.....	do.....	do.....	7 years.....	I	8
98.....	do.....	do.....	7 years, 11 months.....	I	8
99.....	do.....	do.....	7 years.....	I	8

CONCLUSIONS AND RECOMMENDATIONS.

1. Mental deficiency can not be diagnosed by means of the Binet scale alone. This is shown in Tables I and IV, where it may be observed that some children who measure 9 and 10 years by the Binet scale are considered normal, while other children of the same chronological age, who measure 10 and 11 years mentally by the Binet scale, are considered mentally defective.¹

2. The Binet tests are an excellent means for finding out the various mental abilities of an individual. During the application of these tests much light is thrown upon the subject's general fund of information, and an opportunity is afforded to observe the quickness and the character of mental operations, emotional states, and abnormal mental symptoms.

3. The employment of selected tests is a rapid and effective method of differentiating subnormal children in schools for purpose of diagnosis.

4. Normal children 8 years of age and over should perform four movements out of six movements with the four-cube test.

5. Normal white children 12 years of age and over should perform two out of four movements with the five-cube test.

6. Normal children between the ages of 7 and 11 years should be able to repeat six digits.

7. Five-tenths of 1 per cent of 3,793 rural school children examined in New Castle County are definitely feeble-minded and in need of institutional treatment.

8. An additional 1.3 per cent of the total number were so retarded mentally as to be considered probable mental defectives and in need of institutional care.

9. A number of mentally defective children were encountered who exhibited symptoms similar to those which are observed in the adult insane.

10. It is believed, as a result of this survey, that epilepsy is a more prevalent disease than it has heretofore been thought to be.

11. The defective school children encountered in the schools of New Castle County hamper school work just as in other places. In some instances they are a real source of danger to other pupils, and many of them are in school because there is no place to put them.

12. It can not be too strongly recommended that the State of Delaware provide a home for the feeble-minded and other defective individuals who are without proper guardianship where they may be segregated and taught under proper supervision to be self-supporting.

13. It is furthermore strongly recommended that proper measures be taken for the formation of special classes to supply needful training to retarded children in the schools of the State.

¹ The writer personally believes that the term Binet-score should be substituted for the term Binet-age and that "12 points," instead of Binet-age of 12, should be considered the maximum score.

PLAGUE-PREVENTION WORK.

CALIFORNIA.

The following report of plague-prevention work in California for the week ended October 21, 1916, was received from Passed Asst. Surg. Williams, of the United States Public Health Service, in charge of the work:

FEDERAL AND COUNTY INSPECTION SERVICE.

(For the enforcement of the law of June 7, 1913.)

Counties.	Number of inspections.	Number of reinspections.	Acres inspected.	Acres reinspected.	Acres treated.		Holes treated.
					Waste balls.	Grain.	
Contra Costa.....	5	67	2,725	21,598		5,859	
Alameda.....		94		23,720		3,785	
Stanislaus.....	17	105	6,165	53,947	1,873	44,158	3,390
Santa Cruz.....	12	22	2,341	4,481		1,064	
Merced.....	7	43	9,432	20,817		16,732	
Monterey.....	29	26	11,558	13,143		11,135	
San Benito.....	44	57	27,270	27,617		26,965	
Santa Clara.....	38	14	11,316	8,176		8,288	
San Mateo.....	8	6	7,920	894		540	
Total.....	160	434	78,727	179,393	1,873	118,566	3,390

RATS COLLECTED AND EXAMINED FOR PLAGUE.

Oakland:	
Collected.....	57
Examined.....	57
Found infected.....	None.

RECORD OF PLAGUE INFECTION.

Places in California.	Date of last case of human plague.	Date of last case of rat plague.	Date of last case of squirrel plague.	Total number rodents found infected since May, 1907.
Cities:				
San Francisco.....	Jan. 30, 1908	Oct. 23, 1908	(1)	398 rats.
Oakland.....	Aug. 9, 1911	Dec. 1, 1908	(1)	126 rats.
Berkeley.....	Aug. 28, 1907	(1)	(1)	(1)
Los Angeles.....	Aug. 11, 1908	(1)	Aug. 21, 1908	1 squirrel.
Counties:				
Alameda (exclusive of Oakland and Berkeley).	Sept. 24, 1909	Oct. 17, 1909	June 23, 1916	293 squirrels, 1 wood rat.
Contra Costa.....	July 13, 1915	(1)	June 28, 1916	1,629 squirrels.
Fresno.....	(1)	(1)	Oct. 27, 1911	1 squirrel.
Merced.....	(1)	(1)	May 12, 1916	7 squirrels.
Monterey.....	(1)	(1)	May 27, 1916	38 squirrels.
San Benito.....	June 4, 1913	(1)	July 1, 1916	72 squirrels.
San Joaquin.....	Sept. 18, 1911	(1)	Aug. 26, 1911	18 squirrels.
Santa Clara.....	Aug. 31, 1910	(1)	June 21, 1916	32 squirrels.
San Luis Obispo.....	(1)	(1)	Jan. 29, 1910	1 squirrel.
Santa Cruz.....	(1)	(1)	May 30, 1916	5 squirrels.
Stanislaus.....	(1)	(1)	June 2, 1911	18 squirrels.
San Mateo.....	(1)	(1)	June 21, 1916	1 squirrel.

The work is being carried on in the following-named counties: Alameda, Contra Costa, Stanislaus, Monterey, San Benito, Santa Cruz, Merced, Santa Clara, and San Mateo.

¹None.

²Wood rat.

OPERATIONS ON THE WATER FRONT.

Number of vessels inspected for rat guards.....	17
Number of reinspections made on vessels....	4
Number of new rat guards procured.....	2
Rats trapped on wharves and water front..	56
Rats trapped on vessels.....	35
Number of traps set on wharves and water front.....	304
Number of traps set on vessels.....	116
Number of vessels trapped on.....	16
Poisons placed on water front (pieces).....	3,600
Bait used on water front and vessels, bacon (pounds).....	5
Amount of bread used in poisoning water front (loaves).....	12
Number of pounds of poison used on water front.....	4
The following is a record of municipal work performed under the supervision of the Public Health Service:	

COOPERATIVE MUNICIPAL WORK.

Number of premises inspected.....	725
Number of nuisances abated.....	90

LOUISIANA—NEW ORLEANS—PLAGUE ERADICATION.

The following reports of plague-eradication work at New Orleans were received from Passed Asst. Surg. Simpson, of the United States Public-Health Service, in charge of the work:

WEEK ENDED OCT. 28, 1916.

OUTGOING QUARANTINE.

Number of vessels fumigated with sulphur.....	2
Number of vessels fumigated with cyanide gas.....	14
Pounds of sulphur used.....	50
Pounds of cyanide used in cyanide-gas fumigation.....	892
Pints of sulphuric acid used in cyanide-gas fumigation.....	1,338
Clean bills of health issued.....	35
Foul bills of health issued.....	3

FIELD OPERATIONS.

Number of rodents trapped.....	11,102
Number of premises inspected.....	7,325
Notices served.....	359

BUILDINGS RAT PROOFED.

By elevation.....	117
By marginal concrete wall.....	91
By concrete floor and wall.....	113
By minor repairs.....	274
Total buildings rat proofed.....	595
Square yards of concrete laid.....	4,333
Number of premises, planking and shed flooring removed.....	67

COOPERATIVE MUNICIPAL WORK—continued.

Number of rats found dead.....	1
Number of rats trapped.....	90
Number of rats examined.....	75
Number of poisons placed.....	12,600
Number of garbage cans stamped approved.....	740
Rats identified: Mus norvegicus, 32; mus rattus, 18; mus alexandrinus, 41.	

WORK DONE ON OLD BUILDINGS.

Wooden floors removed.....	17
Number yards and passageways, planking removed.....	2
Cubic feet new foundation walls installed....	2,605
Concrete floors installed (square feet, 6,575).....	9
Number of basements concreted (square feet, 8,700).....	10
Yards and passageways, etc., concreted (square feet, 2,690).....	8
Total area concrete laid (square feet, 17,965).....	1
Number of floors rat proofed with wire cloth (square feet, 1,875).....	1
Buildings razed.....	11

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By marginal concrete wall.....	91
By concrete floor and wall.....	113
By minor repairs.....	274
Total buildings rat proofed.....	595
Square yards of concrete laid.....	4,333
Number of premises, planking and shed flooring removed.....	67

BUILDINGS RAT PROOFED—continued.

Number of buildings demolished.....	81
Total buildings rat proofed to date (abated).....	130,100

LABORATORY OPERATIONS.

Rodents received, by species:	
Mus rattus.....	200
Mus norvegicus.....	702
Mus alexandrinus.....	122
Mus musculus.....	10,049
Wood rats.....	171
Musk rats.....	3
Putrid.....	129
Total rodents received at laboratory.....	11,376
Rodents examined.....	1,623
Number of rats suspected of plague.....	140
Plague rats confirmed.....	1

PLAGUE RAT.

Case No. 344:
Address: Crescent City Slaughterhouse.
Captured, Sept. 3, 1916.
Diagnosis confirmed, Oct. 22, 1916.
Treatment of premises: Intensive trapping.
Initiation of all necessary rat proofing throughout entire plant.

¹ Indicates the number of rodents the tissues of which were inoculated into guinea pigs. Most of these showed on necropsy only evidence of recent inflammatory process; practically none presented gross lesions characteristic of plague infection.

WEEK ENDED NOV. 4, 1916.

OUTGOING QUARANTINE.

Number of vessels fumigated with cyanide gas.....	14
Pounds of cyanide used in cyanide-gas fumigation.....	885
Pints of sulphuric acid used in cyanide-gas fumigation.....	1,327
Clean bills of health issued.....	34
Foul bills of health issued.....	2

FIELD OPERATIONS.

Number of rodents trapped.....	9,917
Number of premises inspected.....	6,483
Notices served.....	207
Number of garbage cans installed.....	2

BUILDINGS RAT PROOFED.

By elevation.....	55
By marginal concrete wall.....	113
By concrete floor and wall.....	117
By minor repairs.....	235

PLAGUE RAT.

Case No. 345:
 Address, Virgil and Hamilton Streets, McDonoghville, La.
 Captured, Oct. 4, 1916.
 Diagnosis confirmed, Nov. 1, 1916.
 Treatment of premises: Preliminary steps toward rat proofing.

PLAGUE STATUS TO NOV. 4, 1916.

Last case of human plague, Sept. 8, 1915.
 Last case of rodent plague, Oct. 4, 1916.

BUILDINGS RAT PROOFED—continued.

Total buildings rat proofed.....	520
Square yards of concrete laid.....	4,639
Number of premises, planking and shed flooring removed.....	69
Number of buildings demolished.....	78
Total buildings rat proofed to date (abated).....	130,620

LABORATORY OPERATIONS.

Rodents received by species:	
Mus rattus.....	193
Mus norvegicus.....	690
Mus alexandrinus.....	153
Mus musculus.....	8,728
Wood rats.....	180
Muskrats.....	4
Putrid.....	137
Total rodents received at laboratory.....	10,085
Rodents examined.....	1,709
Number of rats suspected of plague.....	115
Plague rats confirmed.....	1

PLAGUE STATUS TO NOV. 4, 1916—continued.

Total number of rodents captured to Nov. 4.....	912,693
Total number of rodents examined to Nov. 4.....	393,681
Total cases of rodent plague to Nov. 4 by species:	
Mus musculus.....	6
Mus rattus.....	22
Mus alexandrinus.....	18
Mus norvegicus.....	299
Total rodent cases to Nov. 4, 1916.....	345

WASHINGTON—SEATTLE—PLAGUE ERADICATION.

The following reports of plague-eradication work at Seattle were received from Surg. Lloyd, of the United States Public Health Service, in charge of the work:

WEEK ENDING OCT. 21, 1916.

RAT PROOFING.

New buildings inspected.....	27
New buildings reinspected.....	29
Basements concreted, new buildings (square feet, 16,581).....	17
Floors concreted, new buildings (square feet, 12,260).....	11
Yards, etc., concreted, new structures (square feet, 4,673).....	9
Sidewalks concreted, (square feet, 6,150).....	
Total concrete laid, new structures (square feet, 39,664).....	
New buildings elevated.....	5
New premises rat proofed, concrete.....	28
Old buildings inspected.....	4
Premises rat proofed, concrete, old buildings.....	2
Floors concreted, old buildings (square feet, 1,275).....	2

RAT PROOFING—continued.

Premises otherwise rat proofed, old buildings.....	2
Openings screened, old buildings.....	9
Rat holes cemented, old buildings.....	16
Wooden floors removed, old buildings.....	4
Wire screening used (square feet, 775).....	
Buildings razed.....	4

LABORATORY AND RODENT OPERATIONS.

Dead rodents received.....	15
Rodents trapped and killed.....	365
Rodents recovered after fumigation.....	6
Total.....	386
Rodents examined for plague infection.....	271
Rodents proven plague infected.....	None.

¹ Indicates the number of rodents the tissues of which were inoculated into guinea pigs. Most of these showed on necropsy only evidence of recent inflammatory process; practically none presented gross lesions characteristic of plague infection.

LABORATORY AND RODENT OPERATIONS—continued.

Poison distributed, pounds.....	16
Bodies examined for plague infection.....	2
Bodies proven plague infected.....	None.

CLASSIFICATION OF RODENTS.

Mus rattus.....	37
Mus alexandrinus.....	64
Mus norvegicus.....	211
Mus musculus.....	74

WATER FRONT.

Vessels inspected and histories recorded....	18
Vessels fumigated.....	1
Sulphur used, pounds.....	800
New rat guards installed.....	5
Defective rat guards repaired.....	32
Fumigation certificates issued.....	1
Port sanitary statements issued.....	38
The usual day and night patrol was maintained to enforce rat guarding and fending.	

MISCELLANEOUS WORK.

Rat-proofing notices sent to contractors, new buildings.....	20
Letters sent in re rat complaints.....	3
Health lectures.....	2

RODENTS EXAMINED IN EVERETT.

Mus norvegicus trapped.....	64
Mus norvegicus found dead.....	1
Mus musculus trapped.....	6
Total.....	71

Rodents examined for plague infection.....	62
Rodents proven plague infected.....	None.

RAT-PROOFING OPERATIONS IN EVERETT.

New buildings inspected.....	2
New buildings reinspected.....	4
New buildings elevated.....	2
New building basements concreted (square feet, 1460).....	1
Total concrete laid, new buildings (square feet, 1,460).....	

RODENTS EXAMINED IN TACOMA.

Mus norvegicus trapped.....	91
Mus rattus trapped.....	1
Mus alexandrinus trapped.....	4
Total.....	96

Rodents examined for plague infection.....	93
Rodents proven plague infected.....	None.

WEEK ENDED OCT. 28, 1916.

RAT PROOFING.

New buildings inspected.....	21
New buildings reinspected.....	33
Basements concreted, new building (square feet, 50,480).....	14
Floors concreted, new buildings (square feet, 15,250).....	8
Yards, etc., concreted, new structures (square feet, 1,002).....	6
Sidewalks concreted (square feet).....	11,275
Total concrete laid, new structures (square feet).....	78,007
New buildings elevated.....	2
New premises rat-proofed, concrete.....	22
Old buildings inspected.....	5
Premises rat-proofed, concrete, old buildings.....	5
Floors concreted, old buildings (square feet, 8,275).....	5
Wooden floors removed, old buildings.....	5
Buildings razed.....	2

LABORATORY AND RODENT OPERATIONS.

Dead rodents received.....	9
Rodents trapped and killed.....	318
Rodents recovered after fumigation.....	15
Total.....	342
Rodents examined for plague infection.....	225
Rodents proven plague infected.....	None.
Poison distributed, pounds.....	12
Bodies examined for plague infection.....	8
Bodies found plague infected.....	None.

CLASSIFICATION OF RODENTS.

Mus rattus.....	33
Mus alexandrinus.....	43
Mus norvegicus.....	199
Mus musculus.....	67

WATER FRONT.

Vessels inspected and histories recorded....	19
Vessels fumigated.....	2
Sulphur used, pounds.....	2,900
New rat guards installed.....	8
Defective rat guards repaired.....	10
Fumigation certificates issued.....	2
Port sanitary statements issued.....	59
The usual day and night patrol was maintained to enforce rat guarding and fending.	

MISCELLANEOUS WORK.

Rat-proofing notices sent to contractors, new buildings.....	20
Letters sent in re rat complaints.....	5
Lectures delivered.....	2

RODENTS EXAMINED IN EVERETT.

Mus norvegicus trapped.....	59
Mus norvegicus found dead.....	1
Mus rattus trapped.....	1
Mus musculus trapped.....	4
Total.....	65

Rodents examined for plague infection.....	58
Rodents proven plague infected.....	None.

RAT-PROOFING OPERATIONS IN EVERETT.

New buildings inspected.....	2
New buildings reinspected.....	4
New buildings elevated.....	2
New buildings, yards concreted (square feet, 230).....	1
New buildings, floors concreted (square feet, 216).....	1
Total concrete laid, new buildings (square feet).....	446

RODENTS EXAMINED IN TACOMA.

Mus norvegicus trapped.....	115
Mus rattus trapped.....	4
Mus alexandrinus trapped.....	4
<hr/>	
Total.....	123
<hr/>	
Rodents examined for plague infection.....	121
Rodents proven plague infected.....	None.

HAWAII—PLAGUE PREVENTION.

The following reports of plague-prevention work in Hawaii were received from Surg. Trotter, of the United States Public Health Service:

Honolulu.

WEEK ENDED OCT. 21, 1916.

Total rats and mongoose taken.....	381	Classification of rats killed by sulphur dioxide:	
Rats trapped.....	366	Mus alexandrinus.....	5
Mongoose trapped.....	2	Mus rattus.....	8
Rats killed by sulphur dioxide.....	13	Average number of traps set daily.....	984
Examined microscopically.....	306	Cost per rat destroyed, 19½ cents.	
Examined macroscopically.....	75	Last case rat plague, Aiea, 9 miles from Honolulu, Apr. 12, 1910.	
Showing plague infection.....	None.	Last case human plague, Honolulu, July 12, 1910.	
Classification of rats trapped:		Last case rat plague, Paauhau, Hawaii, Jan. 18, 1916.	
Mus alexandrinus.....	166	Last case human plague, Paauhau plantation, Hawaii, Dec. 16, 1915.	
Mus musculus.....	135		
Mus norvegicus.....	48		
Mus rattus.....	22		

Hilo.

WEEK ENDED OCT. 14, 1916.

Number of rats and mongoose received at laboratory.....	3,025	Classification of rats trapped and found dead:	
Number of rats trapped.....	2,959	Mus norvegicus.....	517
Number of rats found dead.....	1	Mus alexandrinus.....	355
Number of mongoose received.....	65	Mus rattus.....	622
Number of rats and mongoose examined macroscopically.....	3,025	Mus musculus.....	1,466
Number of rats and mongoose plague infected.....	None.	Last case of rat plague, Paauhau Sugar Co., Jan. 18, 1916.	
		Last case of human plague, Paauhau Sugar Co., Dec. 16, 1915.	

PORTO RICO—PLAGUE PREVENTION.

The following table shows the number of rats and mice examined in Porto Rico for plague infection during the period from September 9 to October 21, 1916. No plague infection was found.

Place.	Rats.	Mice.
San Juan.....	475	46
Santurce.....	392	84

PREVALENCE OF DISEASE.

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring.

UNITED STATES.

CEREBROSPINAL MENINGITIS.

Virginia Report for September, 1916.

Place.	New cases reported.	Place.	New cases reported.
Virginia:		Virginia—Continued.	
Bland.....	1	Lee.....	1
Campbell.....	1	Pulaski.....	1
Chesterfield.....	1	Rockingham.....	2
Dickenson.....	2	Russell.....	1
Fauquier.....	1	Smyth.....	1
Grayson.....	1	Wythe.....	1
Hallfax.....	1	Total.....	16
Hanover.....	1		

City Reports for Week Ended Oct. 28, 1916.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Birmingham, Ala.....	1	1	Philadelphia, Pa.....	3	1
Boston, Mass.....	2	1	Providence, R. I.....	1	1
Cleveland, Ohio.....	1	.....	St. Louis, Mo.....	1	1
Lowell, Mass.....	1	.....	Troy, N. Y.....	2	1
New York, N. Y.....	6	4	Wilmington, Del.....	1	.....
Orange, N. J.....	.....	1			

DIPHTHERIA.

Georgia—Cave Spring.

Asst. Surg. Slaughter reported November 14, 1916, that during the week ended November 11, 3 new cases of diphtheria were notified at the Georgia School for Deaf, Cave Spring, Ga., making a total of 15 cases reported during the current outbreak.

New York—Middletown.

The State department of health of New York reported November 15, 1916, that 15 cases of diphtheria have been notified at Middletown, N. Y., since November 1, 1916.

See also Diphtheria, measles, scarlet fever, and tuberculosis, page 3203.

ERYSIPELAS.

City Reports for Week Ended Oct. 28, 1916.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Binghamton, N. Y.	4	.....	Hartford, Conn.	1	.....
Boston, Mass.	1	1	Milwaukee, Wis.	3	.....
Bridgeport, Conn.	1	.....	Newark, N. J.	2	.....
Buffalo, N. Y.	4	.....	New York, N. Y. ....	.....	5
Chicago, Ill.	20	2	Philadelphia, Pa.	1	.....
Cleveland, Ohio.	6	1	Pittsburgh, Pa.	4	.....
Denver, Colo.	2	.....	Portland, Oreg.	2	.....
Detroit, Mich.	3	.....	Rochester, N. Y.	1	1
Duluth, Minn.	1	.....	St. Louis, Mo.	5	.....
El Paso, Tex. ....	.....	1	San Francisco, Cal.	1	.....
Ft. Worth, Tex. ....	.....	1	Toledo, Ohio. ....	.....	1
Harrisburg, Pa.	1	.....	Wilkinsburg, Pa.	1	.....

LEPROSY.

Hawaii Report for September, 1916.

During the month of September, 1916, 5 cases of leprosy were reported in the Territory of Hawaii, as follows: Three cases in Honolulu, 1 case in East Kau district, and 1 case in Makaweli district.

MALARIA.

Virginia Report for September, 1916.

Place.	New cases reported.	Place.	New cases reported.
Virginia:		Virginia—Continued.	
Accomac County.	28	Mathews County.	1
Albermarle County.	3	Mecklenburg County.	17
Alexandria County.	1	Middlesex County.	8
Alleghany County.	2	Montgomery County.	6
Amelia County.	16	Nansmond County.	146
Amherst County.	1	Norfolk County.	297
Bedford County.	8	Portsmouth.	4
Botetourt County.	2	Northampton County.	79
Brunswick County.	95	Northumberland County.	43
Campbell County.	32	Nottoway County.	19
Caroline County.	56	Orange County.	5
Charles City County.	9	Page County.	2
Charlotte County.	17	Pittsylvania County.	72
Chesterfield County.	18	Powhatan County.	38
Culpeper County.	1	Princess Anne County.	56
Cumberland County.	28	Prince Edward County.	19
Dinwiddie County.	22	Prince George County.	42
Elizabeth City County.	17	Prince William County.	2
Essex County.	14	Richmond County.	16
Fairfax County.	11	Roanoke County.	3
Fauquier County.	1	Rockbridge County.	6
Fluvanna County.	5	Rockingham County.	1
Giles County.	1	Russell County.	2
Gloucester County.	22	Shenandoah County.	1
Greensville County.	101	Southampton County.	53
Halifax County.	117	Spotsylvania County.	4
Hanover County.	56	Fredericksburg.	3
Henrico County.	27	Stafford County.	4
Richmond.	21	Surry County.	48
Henry County.	1	Sussex County.	28
Isle of Wight County.	77	Tazewell County.	1
James City County.	38	Warwick County.	25
King and Queen County.	9	Westmoreland County.	25
King William County.	51	Wise County.	4
Lancaster County.	76	Wythe County.	1
Loudoun County.	4	York County.	22
Louisa County.	6		
Lunenburg County.	21	Total.	2,118

Malaria—Continued.

City Reports for Week Ended Oct. 28, 1916.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Birmingham, Ala.....	6	.....	Newark, N. J.....	1	.....
Chicago, Ill.....	.....	1	New Orleans, La.....	17	.....
Fall River, Mass.....	1	.....	San Francisco, Cal.....	1	.....
Galveston, Tex.....	.....	1	Stockton, Cal.....	1	.....
Mobile, Ala.....	.....	1	Wilmington, N. C.....	2	.....

MEASLES.

See Diphtheria, measles, scarlet fever, and tuberculosis, p. 3203.

PELLAGRA.

Virginia Report for September, 1916.

Place.	New cases reported.	Place.	New cases reported.
Virginia:		Virginia—continued.	
Amelia County.....	1	New Kent County.....	2
Amherst County.....	2	Norfolk County.....	1
Augusta County.....	3	Patrick County.....	1
Charlotte County.....	1	Powhatan County.....	1
Dickenson County.....	2	Prince William County.....	4
Floyd County.....	1	Rappahannock County.....	1
Fluvanna County.....	1	Stafford County.....	1
James City County.....	1	Tazewell County.....	1
Middlesex County.....	1	Wise County.....	1
Montgomery County.....	1	Total.....	28
Nelson County.....	1		

City Reports for Week Ended Oct. 28, 1916.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Boston, Mass.....	1	1	New Orleans, La.....	1	1
Charleston, S. C.....	.....	1	Richmond, Va.....	.....	1
Nashville, Tenn.....	.....	1	St. Joseph, Mo.....	.....	1

PLAGUE.

Louisiana—McDonoghville—Plague-Infected Rat Found.

Passed Asst. Surg. Simpson reported that a rat which was found October 4, 1916, at the corner of Virgil and Hamilton Streets, McDonoghville, La., was proved positive for plague infection November 1.

Louisiana—New Orleans—Plague-Infected Rat Found.

Passed Asst. Surg. Simpson reported that a rat captured September 4, 1916, at 1,056 South Rampart Street, New Orleans, La., was proved positive for plague infection November 5, 1916.

PNEUMONIA.

City Reports for Week Ended Oct. 28, 1916.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Alameda, Cal.....	1	.....	Los Angeles, Cal.....	4	2
Beaver Falls, Pa.....	2	.....	Lowell, Mass.....	1	1
Berkeley, Cal.....	1	.....	McKeesport, Pa.....	3	.....
Binghamton, N. Y.....	3	2	Manchester, N. H.....	1	3
Braddock, Pa.....	1	3	Norfolk, Va.....	1	1
Chicago, Ill.....	117	65	Philadelphia, Pa.....	32	18
Cleveland, Ohio.....	18	11	Pittsburgh, Pa.....	8	26
Detroit, Mich.....	6	6	Reading, Pa.....	2	2
Dubuque, Iowa.....	1	1	Rochester, N. Y.....	1	4
Flint, Mich.....	1	1	Saginaw, Mich.....	1	.....
Grand Rapids, Mich.....	1	.....	San Francisco, Cal.....	8	9
Johnstown, Pa.....	1	1	Schenectady, N. Y.....	1	1
Kalamazoo, Mich.....	3	2	Stockton, Cal.....	1	1
Kansas City, Mo.....	3	4			

POLIOMYELITIS (INFANTILE PARALYSIS).

Cases Reported by States.

The following tabular statement shows the number of cases of poliomyelitis reported to the United States Public Health Service by State health authorities during the periods shown:

	Total cases reported.		Total cases reported.
Alabama:		District of Columbia:	
July 1 to 31.....	77	July 1 to 31.....	8
Aug. 1 to 31.....	62	Aug. 1 to 31.....	18
Sept. 1 to 25.....	12	Sept. 1 to 30.....	6
	151	Oct. 1 to 31.....	4
Arizona:			36
July 1 to 31.....	2	Florida:	
Aug. 1 to 31.....	2	July 1 to 31.....	4
Sept. 1 to 25.....	2	Aug. 1 to 31.....	3
	6	Sept. 1 to 25.....	1
Arkansas:			8
July 1 to 31.....	5	Georgia.....	(²)
Aug. 1 to 31.....	1	Idaho:	
Sept. 1 to 25.....	0	Aug. 1 to 31.....	4
	6	Sept. 1 to 30.....	3
California:		Oct. 1 to 31.....	2
July 1 to 31.....	12	Nov. 1 to 10.....	1
Aug. 1 to 31.....	18		10
Sept. 1 to 30.....	13	Illinois:	
Oct. 1 to 28.....	19	July 1 to 31.....	76
	62	Aug. 1 to 31.....	339
Colorado:		Sept. 1 to 30.....	257
July 1 to 31.....	1	Oct. 1 to Nov. 11.....	138
Aug. 1 to 31.....	2		810
Sept. 1 to 30.....	4	Indiana:	
Oct. 1 to Nov. 4.....	5	July 1 to 31.....	27
	12	Aug. 1 to 31.....	38
Connecticut:		Sept. 1 to 30.....	67
July 1 to 31.....	165	Oct. 1 to Nov. 4.....	45
Aug. 1 to 31.....	367		177
Sept. 1 to 30.....	274	Iowa:	
Oct. 1 to 31.....	170	July 1 to 31.....	30
Nov. 1 to 11.....	16	Aug. 1 to 31.....	82
	892	Sept. 1 to 30.....	66
Delaware:		Oct. 1 to Nov. 11.....	42
July 1 to 31.....	1		220
Aug. 1 to 31.....	11	Kansas:	
Sept. 1 to 30.....	36	July 1 to 31.....	14
Oct. 1 to Nov. 11.....	25	Aug. 1 to 31.....	31
	73	Sept. 1 to 30.....	19
		Oct. 1 to Nov. 4.....	23
			87

¹Corrected figures. Later report than figures previously published.
² Disease present, but the number of cases is not known.

POLIOMYELITIS (INFANTILE PARALYSIS)—Continued.

Cases Reported by States—Continued.

	Total cases reported.		Total cases reported.
Kentucky:		New Jersey:	
July 1 to 31.....	15	July 1 to 31.....	640
Aug. 1 to 31.....	19	Aug. 1 to 31.....	2,114
Sept. 1 to 23.....	1	Sept. 1 to 30.....	957
	35	Oct. 1 to 31.....	269
Louisiana:		Nov. 1 to 4.....	3
July 1 to 31.....	19		3,930
Aug. 1 to 31.....	6	New Mexico:	
Sept. 1 to 30.....	5	July 1 to Sept. 25.....	
Oct. 1 to Nov. 4.....	3		
	33	New York (exclusive of New York City):	
Maine:		July 1 to 31.....	517
July 1 to 31.....	0	Aug. 1 to 31.....	1,527
Aug. 1 to 31.....	26	Sept. 1 to 30.....	1,064
Sept. 1 to 30.....	46	Oct. 3 to 16.....	238
Oct. 1 to Nov. 11.....	46		3,346
	118	North Carolina.....	(?)
Maryland:		North Dakota:	
July 1 to 31.....	10	July 1 to 31.....	0
Aug. 1 to 31.....	64	Aug. 1 to 31.....	2
Sept. 1 to 30.....	100	Sept. 1 to 30.....	16
Oct. 1 to 31.....	120		18
Nov. 1 to 14.....	21	Ohio:	
	315	July 1 to 31.....	94
Massachusetts:		Aug. 1 to 31.....	168
July 1 to 31.....	107	Sept. 1 to 30.....	138
Aug. 1 to 31.....	252		400
Sept. 1 to 30.....	623	Oklahoma:	
Oct. 1 to 31.....	704	July 1 to 31.....	12
Nov. 1 to 15.....	129	Aug. 1 to 31.....	10
	1,815	Sept. 1 to 25.....	2
Michigan:			24
July 1 to 31.....	51	Oregon:	
Aug. 1 to 31.....	163	Sept. 1 to 30.....	3
Sept. 1 to 30.....	166	Oct. 1 to 31.....	28
Oct. 1 to 23.....	69	Nov. 1 to 4.....	2
	449		33
Minnesota:		Pennsylvania:	
July 1 to 31.....	142	July 1 to 31.....	107
Aug. 1 to 31.....	373	Aug. 1 to 31.....	711
Sept. 1 to 30.....	186	Sept. 1 to 30.....	743
Oct. 1 to Nov. 8.....	156	Oct. 8 to 28.....	229
	857		1,790
Mississippi:		Rhode Island:	
July 1 to 31.....	57	July 1 to 31.....	26
Aug. 1 to 31.....	31	Aug. 1 to 31.....	57
Sept. 1 to 30.....	14	Sept. 1 to 30.....	70
Oct. 1 to 14.....	3	Oct. 1 to Nov. 11.....	56
	105		209
Missouri:		South Carolina:	
July 1 to 31.....	4	July 1 to 31.....	20
Aug. 1 to 31.....	3	Aug. 1 to 31.....	58
Sept. 1 to 25.....	4	Sept. 1 to 30.....	24
	11	Oct. 1 to 31.....	11
Montana:			113
July 1 to 31.....	11	South Dakota:	
Aug. 1 to 31.....	28	July 1 to 31.....	5
Sept. 1 to 30.....	33	Aug. 1 to 31.....	19
Oct. 1 to Nov. 4.....	10	Sept. 1 to 25.....	14
	182		38
Nebraska:		Tennessee:	
July 1 to 31.....	1	July 1 to 31.....	18
Aug. 1 to 31.....	7	Aug. 1 to 31.....	21
Sept. 1 to 28.....	6	Sept. 1 to 25.....	0
	14		39
Nevada:		Texas:	
July 1 to Sept. 24.....	0	July 1 to 31.....	22
	0	Aug. 1 to 31.....	25
New Hampshire:		Sept. 1 to 30.....	16
July 1 to 31.....	7		63
Aug. 1 to 31.....	16		
Sept. 1 to 30.....	31		
Oct. 1 to 19.....	3		
	57		

¹ Not including cases on Crow Reservation.

² Disease present, but the number of cases is not known.

POLIOMYELITIS (INFANTILE PARALYSIS)—Continued.

Cases Reported by States—Continued.

	Total cases reported.		Total cases reported.
Utah:		West Virginia:	
Aug. 1 to 31.....	5	July 1 to 31.....	5
Vermont:		Aug. 1 to 31.....	10
July 1 to 31.....	1	Sept. 1 to 30.....	18
Aug. 1 to 31.....	8	Oct. 1 to Nov. 11.....	16
Sept. 1 to 30.....	23		49
Oct. 1 to 31.....	18	Wisconsin:	
	50	July 1 to 31.....	20
Virginia:		Aug. 1 to 31.....	173
July 1 to 31.....	24	Sept. 1 to 30.....	153
Aug. 1 to 31.....	44	Oct. 1 to 31.....	84
Sept. 1 to 30.....	64		435
Oct. 1 to 21.....	22	Wyoming:	
	154	July 1 to 31.....	0
Washington:		Aug. 1 to 31.....	1
July 1 to 31.....	5	Sept. 1 to 30.....	3
Aug. 1 to 31.....	2		4
Sept. 1 to 30.....	10		
Oct. 1 to Nov. 11.....	6		
	23		

City Reports—August 13 to November 11, 1916.

The following table shows the number of cases of poliomyelitis reported to the United States Public Health Service by the health departments of the cities which reported five or more cases in any one week:

City.	Cases reported for week ended—												
	Aug. 19.	Aug. 26.	Sept. 2.	Sept. 9.	Sept. 16.	Sept. 23.	Sept. 30.	Oct. 7.	Oct. 14.	Oct. 21.	Oct. 28.	Nov. 4.	Nov. 11.
Akron, Ohio.....		1	3	5	5	1			2				
Atlantic City, N. J. .	2	5	5		2	2							
Baltimore, Md.....	4	9	16	12	13	10	29	20	23	18	8	11	3
Bayonne, N. J.....	14	4	1	5	1								
Boston, Mass.....	4	8	13	22	38	55	52	77	54	53	36	24	
Bridgeport, Conn.....		3	3		7	2	2	3					2
Brookline, Mass.....	1			1	2	1		1	5	5		1	1
Cambridge, Mass.....	2	2	1	2	5	4	5	11	6	11	4	7	
Camden, N. J.....	13	6	9	5	7	2	1	3					
Chicago, Ill.....	25	22	24	25	21	20	13	10	8	8	6	4	
Cincinnati, Ohio.....	4	5	2	3	6	3	4	5	1	2	1	3	
Cleveland, Ohio.....	1	2	5	2	3	1	1	2		1		1	
Detroit, Mich.....		6	1	4	3	3	11	3	1	2			
East Orange, N. J.....	8	10	6	10	3	2	2				1		1
Flint, Mich.....	3	8		4		4	2		2	1	4		
Grand Rapids, Mich.....	3	1	1	2	1	6	1		1	1	1		1
Harrison, N. J.....	10	6											
Hartford, Conn.....		4	6	7	5	5	4	4		3	4	1	3
Haverhill, Mass.....	1	5		1	1	1	2				1		
Indianapolis, Ind.....				5	4	2	4	1		1			1
Jersey City, N. J.....	27	16	22	9	6	8	11	2	5	2			
Kearny, N. J.....	4	5			3								
Long Branch, N. J.....	1	2	8		4	1	1						
Lynn, Mass.....		1	2	2	2	1	2	3	6	8	6	3	4
Malden, Mass.....	2			2	2	6	10	3	4	4	6		
Manchester, N. H.....			3	5	1	5							
Minneapolis, Minn.....	12	14	12	4	5		3		2	1	2		
Montclair, N. J.....	5	2	1	2	1		4	1	1	4	1	1	1
Newark, N. J.....	230	150	89	45	38	30	12	17	9		1	1	
Newburyport, Mass.....		1	2	5	1	7	2	1	3				
New Haven, Conn.....	5	8	6	4	7	1	1		1				
New York, N. Y.....	865	707	441	352	252	156	142	96	72	43	37	19	14
North Adams, Mass.....		5	2	2	1	4	1						
Northampton, Mass.....	6	2	1	1	1	1		1	1	4	1	1	1
Orange, N. J.....	8	10	15	4	1	2	1						
Perth Amboy, N. J.....	2	3	1	3	2								
Philadelphia, Pa.....	106	132	120	125	85	70	47	59	27	26	24	7	8

POLIOMYELITIS (INFANTILE PARALYSIS)—Continued.

City Reports—August 13 to November 11, 1916—Continued.

City.	Cases reported for week ended—													
	Aug. 19.	Aug. 26.	Sept. 2.	Sept. 9.	Sept. 16.	Sept. 23.	Sept. 30.	Oct. 7.	Oct. 14.	Oct. 21.	Oct. 28.	Nov. 4.	Nov. 11.	
Pittsburgh, Pa.	1	3	5	5	2	1	1	1	1	1	1	1	1	
Pittsfield, Mass.	2	7	2	10	8	6	4	4	5	8	4	.....	.....
Plainfield, N. J.	6	10	1	6	4	2	3	1	3	.....	.....	.....	.....
Portland, Oreg. ....	.....	.....	.....	.....	1	1	1	3	4	5	1	.....	.....
Providence, R. I.	3	2	10	7	10	17	9	9	7	3	9	8	.....
Quincy, Mass. ....	.....	.....	.....	.....	4	5	4	.....	.....	.....	.....	.....	.....
St. Louis, Mo. ....	.....	5	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
St. Paul, Minn.	9	6	8	7	2	3	2	4	.....	1	.....	.....	.....
Somerville, Mass.	6	1	2	1	7	1	.....	5	3	4	5	3	2
Springfield, Mass. ....	.....	5	5	9	12	8	9	5	3	4	2	3	4
Syracuse, N. Y.	23	34	33	49	29	20	12	11	5	.....	4	.....	2
Toledo, Ohio.	10	10	7	11	1	2	3	1	2	1	1	1	.....
Trenton, N. J.	7	11	7	11	14	23	34	20	8	12	4	1	1	
Waltham, Mass. ....	.....	.....	.....	.....	2	.....	.....	8	2	9	2	2	.....
Washington, D. C.	5	7	2	4	.....	1	1	4	.....	.....	.....	.....	.....
West Hoboken, N. J.	3	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wilmington, Del. ....	.....	3	3	3	2	3	8	7	6	3	5	1	1

Connecticut—New Haven.

The health officer of New Haven, Conn., reported November 13, 1916, that during the period from July 1 to November 11, 1916, 84 cases of poliomyelitis were notified in New Haven.

New York City.

Surg. Lavinder reported that cases of poliomyelitis had been notified in New York City as follows: November 8, 3; November 9, 2; November 10, 2; November 11, no case; November 12, 1; November 13, 1; November 14, no case.

Virginia Report for September, 1916.

Place.	New cases reported.	Place.	New cases reported.
Virginia:		Virginia—Continued—	
Alleghany County.	1	Norfolk County.	1
Bedford County.	2	Portsmouth.	1
Campbell County.	3	Nottoway County.	1
Lynchburg.	11	Orange County.	1
Chesterfield County.	1	Patrick County.	3
Dickenson County.	2	Pittsylvania County.	2
Essex County.	1	Danville.	1
Floyd County.	4	Powhatan County.	1
Franklin County.	1	Princess Anne County.	1
Hanover County.	1	Roanoke County—	
Henrico County.	1	Roanoke.	4
Richmond.	7	Smyth County.	1
King and Queen County.	1	Tazewell County.	1
Lancaster County.	1	Washington County.	1
Loudoun County.	4	Wise County.	1
Louisa County.	2		
Mecklenburg County.	1	Total.	64

POLIOMYELITIS (INFANTILE PARALYSIS)—Continued.

City Reports for Week Ended Oct. 28, 1916.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Baltimore, Md.	8	4	Montclair, N. J.	1	.....
Birmingham, Ala.	1	.....	Newark, N. J.	1	.....
Boston, Mass.	36	10	Newton, Mass.	2	.....
Buffalo, N. Y.	1	.....	New York, N. Y.	37	16
Cambridge, Mass.	4	.....	Northampton, Mass.	1	1
Chicago, Ill.	6	.....	Oakland, Cal.	1	.....
Cincinnati, Ohio.	1	.....	Philadelphia, Pa.	24	5
Cumberland, Md.	3	1	Pittsburgh, Pa.	1	.....
East Orange, N. J.	1	.....	Pittsfield, Mass.	4	1
Everett, Mass.	3	1	Portland, Oreg.	1	.....
Fitchburg, Mass.	1	.....	Providence, R. I.	9	2
Flint, Mich.	4	.....	Quincy, Mass.	.....	2
Grand Rapids, Mich.	1	.....	Richmond, Va.	1	.....
Hartford, Conn.	4	.....	Roanoke, Va.	1	.....
Haverhill, Mass.	1	.....	Saginaw, Mich.	1	.....
Kalamazoo, Mich.	1	.....	San Francisco, Cal.	2	.....
La Crosse, Wis.	1	.....	Schenectady, N. Y.	1	.....
Lancaster, Pa.	2	.....	Somerville, Mass.	5	.....
Los Angeles, Cal.	1	.....	South Bend, Ind.	1	.....
Lowell, Mass.	2	.....	Springfield, Mass.	2	.....
Lynn, Mass.	6	2	Syracuse, N. Y.	4	1
McKeesport, Pa.	1	.....	Toledo, Ohio.	1	1
Malden, Mass.	6	1	Trenton, N. J.	4	1
Medford, Mass.	1	.....	Waltham, Mass.	2	2
Milwaukee, Wis.	1	1	Wilmington, Del.	5	.....
Minneapolis, Minn.	2	.....		

RABIES IN ANIMALS.

Washington—Seattle.

Surg. Lloyd reported that during the month of October, 1916, 3 cases of rabies in dogs, 2 of which were proved positive, and 2 positive cases of rabies in cattle were reported in Seattle, Wash. This makes a total of 492 cases in dogs, 10 in cattle, 4 in cats, 2 in horses, and 1 in a hog since September 10, 1913.

City Reports for Week Ended Oct. 28, 1916.

During the week ended October 28, 1916, 3 cases of rabies in animals were reported in Buffalo, N. Y., and 3 cases in Detroit, Mich.

SCARLET FEVER.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 3203.

SMALLPOX.

Arkansas—Tyronza.

The State health officer of Arkansas reported November 8, 1916, that 8 cases of smallpox were notified at Tyronza, Ark.

Miscellaneous State Reports.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Virginia (Sept. 1 to 30):			Virginia (Sept. 1 to 30)—Contd.		
Amelia County.....	2	.....	Rockingham County.....	1	.....
Frederick County.....	2	.....	Warren County.....	1	.....
Loudoun County.....	2	.....		
			Total.....	8	.....

SMALLPOX—Continued.

City Reports for Week Ended Oct. 28, 1916.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Butte, Mont.	1	1	New Orleans, La.	2	.....
Chicago, Ill.	2	.....	Omaha, Nebr.	1	.....
Cleveland, Ohio	36	.....	Portland, Oreg.	1	.....
Detroit, Mich.	1	.....	St. Joseph, Mo.	1	.....
Flint, Mich.	1	.....	Toledo, Ohio	2	.....
Marinette, Wis.	1	.....	Topeka, Kans.	1	.....
Minneapolis, Minn.	1	.....		

TETANUS.

City Reports for Week Ended Oct. 28, 1916.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Chicago, Ill. ....	.....	1	New Orleans, La. ....	.....	2
Cincinnati, Ohio	1	.....	New York, N. Y.	1	.....
Columbus, Ohio	1	1	Philadelphia, Pa.	4	1
Fall River, Mass. ....	.....	1	Pittsburgh, Pa.	1	1
Harrisburg, Pa.	1	.....	Stockton, Cal.	1	.....
Manchester, N. H.	1	1			

TUBERCULOSIS.

See Diphtheria, measles, scarlet fever, and tuberculosis, page-3203.

TYPHOID FEVER.

State Reports for September, 1916.

Place.	New cases reported.	Place.	New cases reported.
Hawaii:		Virginia—Continued.	
Hawaii—		Culpeper County	4
Hamakua district	2	Cumberland County	3
Hilo	1	Dickenson County	12
North Kona district	2	Dinwiddie County	1
Puna district	2	Elizabeth City County	4
South Kohala district	1	Essex County	1
Maui:		Fairfax County	3
Makawao district	1	Fauquier County	5
Wailuku district	1	Floyd County	4
Oahu:		Franklin County	4
Ewa district	3	Frederick County	51
Honolulu	7	Giles County	12
Total	20	Gloucester County	8
		Goochland County	1
Virginia:		Grayson County	7
Accomac County	27	Greene County	2
Albemarle County	3	Halifax County	7
Alexandria County	3	Hanover County	10
Alexandria	2	Henrico County	6
Alleghany County	4	Richmond	29
Amelia County	2	Henry County	12
Amherst County	3	Isle of Wight County	3
Appomattox County	11	James City County	2
Augusta County	15	King and Queen County	6
Bath County	11	King George County	1
Bedford County	7	King William County	3
Bland County	4	Lee County	14
Botetourt County	4	Loudoun County	8
Brunswick County	7	Louisa County	2
Buchanan County	21	Lunenburg County	2
Campbell County	13	Madison County	3
Lynchburg	15	Mathews County	1
Caroline County	6	Mecklenburg County	5
Carroll County	2	Middlesex County	7
Charles City County	2	Montgomery County	20
Charlotte County	6	Nansemond County	3
Chesterfield County	8	Nelson County	5
Clarke County	1	Norfolk County	4
Craig County	2	Portsmouth	6
		Northampton County	10

TYPHOID FEVER—Continued.

State Reports for September, 1916—Continued.

Place.	New cases reported.	Place.	New cases reported.
Virginia—Continued.		Virginia—Continued.	
Northumberland County.....	25	Scott County.....	19
Nottoway County.....	5	Shenandoah County.....	20
Orange County.....	3	Smyth County.....	8
Page County.....	8	Southampton County.....	6
Patrick County.....	8	Spotsylvania County.....	3
Powhatan County.....	4	Stafford County.....	1
Princess Anne County.....	7	Surry County.....	1
Prince Edward County.....	4	Sussex County.....	2
Prince George County.....	4	Tazewell County.....	19
Prince William County.....	1	Warren County.....	2
Pulaski County.....	10	Washington County.....	23
Rappahannock County.....	4	Westmoreland County.....	6
Richmond County.....	3	Wise County.....	13
Roanoke County.....	12	Wythe County.....	19
Roanoke.....	13	York County.....	2
Rockbridge County.....	8		
Rockingham County.....	11	Total.....	756
Russell County.....	12		

City Reports for Week Ended Oct. 28, 1916.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Allentown, Pa.....	2	1	Marinette, Wis.....	1	.....
Atlantic City, N. J.....	2	.....	Milwaukee, Wis.....	3	2
Baltimore, Md.....	22	2	Minneapolis, Minn.....	12	.....
Birmingham, Ala.....	5	1	Mobile, Ala.....	1	2
Boston, Mass.....	5	1	Nashville, Tenn.....	4	1
Buñalo, N. Y.....	12	4	Newark, N. J.....	4	2
Butler, Pa.....	1	.....	New Castle, Pa.....	2	.....
Cairo, Ill.....	1	.....	New Haven, Conn.....	1	.....
Canton, Ohio.....	2	1	New London, Conn.....	1	.....
Charleston, S. C.....	5	.....	New Orleans, La.....	18	2
Chicago, Ill.....	5	.....	New York, N. Y.....	33	12
Cincinnati, Ohio.....	1	1	Norfolk, Va.....	1	.....
Cleveland, Ohio.....	3	.....	North Adams, Mass.....	1	.....
Coffeyville, Kans.....	1	.....	Oklahoma, Okla.....	1	.....
Columbus, Ohio.....	7	1	Omaha, Nebr.....	1	.....
Denver, Colo.....	1	1	Perth Amboy, N. J.....	1	.....
Detroit, Mich.....	22	3	Philadelphia, Pa.....	20	2
Duluth, Minn.....	2	.....	Pittsburgh, Pa.....	2	2
East Orange, N. J.....	1	.....	Pittsfield, Mass.....	1	.....
Elgin, Ill.....	1	.....	Portland, Me.....	1	.....
El Paso, Tex.....	2	1	Portland, Oreg.....	5	.....
Erie, Pa.....	2	.....	Providence, R. I.....	7	1
Evansville, Ind.....	1	.....	Racine, Wis.....	7	2
Everett, Wash.....	1	.....	Reading, Pa.....	7	2
Fall River, Mass.....	4	1	Richmond, Va.....	6	.....
Flint, Mich.....	8	2	Rockford, Ill.....	1	.....
Fort Worth, Tex.....	4	.....	Saginaw, Mich.....	1	1
Galveston, Tex.....	1	.....	St. Joseph, Mo.....	1	.....
Grand Rapids, Mich.....	1	.....	St. Louis, Mo.....	11	.....
Harrisburg, Pa.....	21	6	St. Paul, Minn.....	2	.....
Hartford, Conn.....	.....	1	Salt Lake City, Utah.....	1	.....
Haverhill, Mass.....	1	.....	San Diego, Cal.....	2	.....
Hoboken, N. J.....	2	.....	San Francisco, Cal.....	4	.....
Indianapolis, Ind.....	10	.....	Somerville, Mass.....	1	.....
Jersey City, N. J.....	3	1	South Bend, Ind.....	2	.....
Johnstown, Pa.....	1	.....	Springfield, Mass.....	1	.....
Kalamazoo, Mich.....	1	.....	Springfield, Ohio.....	3	2
Kansas City, Mo.....	2	.....	Steeltown, Pa.....	3	.....
Lancaster, Pa.....	1	.....	Tacoma, Wash.....	1	.....
Lawrence, Mass.....	1	.....	Toledo, Ohio.....	4	2
Lexington, Ky.....	3	.....	Topeka, Kans.....	10	1
Lima, Ohio.....	1	1	Troy, N. Y.....	1	.....
Lincoln, Nebr.....	2	.....	Washington, D. C.....	8	.....
Little Rock, Ark.....	2	.....	Watertown, N. Y.....	.....	2
Los Angeles, Cal.....	1	.....	Wheeling, W. Va.....	1	.....
Lowell, Mass.....	1	.....	Wichita, Kans.....	1	.....
Lynchburg, Va.....	1	.....	Wilkes-Barre, Pa.....	1	1
Lynn, Mass.....	1	.....	Worcester, Mass.....	1	.....
McKeesport, Pa.....	2	1	York, Pa.....	1	.....
Manchester, N. H.....	1	.....		

TYPHUS FEVER.**California—Kerman.**

The State board of health of California reported November 14, 1916, that a case of typhus fever had been notified at Kerman, Fresno County, Cal., in a Mexican laborer, C. A., who left El Paso, Tex., for Kerman, October 17 and developed typhus fever October 25, 1916.

California—Sherman.

The secretary of the State Board of Health of California reported November 9, 1916, that a case of typhus fever was notified in a Mexican section laborer at Sherman, Los Angeles County, Cal. The patient left El Paso, Tex., October 17, 1916, and arrived at Sherman October 31.

City Reports for Week Ended Oct. 28, 1916.

During the week ended October 28, 1916, three cases of typhus fever with one death were reported in El Paso, Tex., and two cases were reported in New York, N. Y.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS.**State Reports for September, 1916.**

During the month of September, 1916, 10 cases of diphtheria, 14 cases of measles, and 1 case of scarlet fever were reported in the Territory of Hawaii, and 535 cases of diphtheria, 210 cases of measles, and 172 cases of scarlet fever were reported in Virginia.

City Reports for Week Ended Oct. 28, 1916.

City.	Popula- tion as of July 1, 1915 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Over 500,000 inhabitants:										
Baltimore, Md.....	584,605	156	16	1	2		2		32	14
Boston, Mass.....	745,139	227	48	1	4	1	18		39	21
Chicago, Ill.....	2,447,045	589	206	22	23	1	88	1	202	51
Cleveland, Ohio.....	656,975	181	65	6	4		11		39	21
Detroit, Mich.....	554,717	176	101	5	4		36		36	20
New York, N. Y.....	5,468,190	1,337	137	13	22	1	46	1	350	160
Philadelphia, Pa.....	1,683,664	457	32	3	9	1	15		108	54
Pittsburgh, Pa.....	571,984	187	37	1	10	2	10		12	11
St. Louis, Mo.....	745,988	224	116	7	11		27		28	16
From 300,000 to 500,000 inhab- itants:										
Buffalo, N. Y.....	461,335	152	21		4		13		34	12
Cincinnati, Ohio.....	406,706	125	60	4	1		17		17	14
Jersey City, N. J.....	300,133	72	11				9		18	3
Los Angeles, Cal.....	465,367	95	6	1	14		9		40	11
Milwaukee, Wis.....	425,062	94	26	2			18	1	14	6
Minneapolis, Minn.....	353,460	13	13				7			
Newark, N. J.....	399,000		23	1	2		6		45	14
New Orleans, La.....	366,484		13	2	41		1		37	25
San Francisco, Cal.....	416,912	130	20	4	12		11	1	11	12
Washington, D. C.....	358,679	108	16	1			8		22	12

¹ Population Apr. 15, 1910; no estimate made.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Con.

City Reports for Week Ended Oct. 28, 1916—Continued.

City.	Population as of July 1, 1915 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
From 200,000 to 300,000 inhabitants:										
Columbus, Ohio.....	209,722	71	12	1	5	2	9	7	4	
Denver, Colo.....	253,161	59	5	4					10	
Indianapolis, Ind.....	265,578		25	1			9	9		
Kansas City, Mo.....	289,879	78	17	1			6	6	11	
Portland, Oreg.....	272,833	37	1	26			12	5	2	
Providence, R. I.....	250,025	80	11	2			13		9	
Rochester, N. Y.....	250,747	62	3	1			3	3		
St. Paul, Minn.....	241,999	52	10	1	1		3	12	7	
From 100,000 to 200,000 inhabitants:										
Birmingham, Ala.....	174,108	54	3					4	5	
Bridgeport, Conn.....	118,434	36	6	4		1		3		
Cambridge, Mass.....	111,669	26	11			3		7	1	
Fall River, Mass.....	126,904	36	2		2	1		7	6	
Grand Rapids, Mich.....	125,759	22	2			14		11		
Hartford, Conn.....	108,969	36	9					5		
Lowell, Mass.....	112,124	33	5	1	6	3	1	4	1	
Lynn, Mass.....	100,316	15	4		1	1		1	1	
Nashville, Tenn.....	115,978	46	8		17	6		3	6	
New Bedford, Mass.....	114,694	23	2		2	3		5	3	
New Haven, Conn.....	147,095	5	2	1				6	1	
Oakland, Cal.....	190,803	1	1			5		4	2	
Omaha, Nebr.....	135,455	41	4		1	4		1	1	
Reading, Pa.....	105,094	30	1		1			9	5	
Richmond, Va.....	154,674	51	15	1		7		10	7	
Salt Lake City, Utah.....	113,567	19	1		127	21		1	1	
Springfield, Mass.....	103,216	35	1	1		3		2	3	
Syracuse, N. Y.....	152,534	36	8		1	1				
Tacoma, Wash.....	108,094	12			67			1		
Toledo, Ohio.....	187,840	74	2		1	10			8	
Trenton, N. J.....	109,212	38	2					8	2	
Worcester, Mass.....	160,523	46	4			9		5	1	
From 50,000 to 100,000 inhabitants:										
Akron, Ohio.....	82,958		13				8	1		
Allentown, Pa.....	61,901	19	3						2	
Atlantic City, N. J.....	55,806		2	1	1	1		6		
Bayonne, N. J.....	67,582		3			1		4		
Berkeley, Cal.....	54,879	9				2			1	
Binghamton, N. Y.....	53,082	19	9	2		6		2	1	
Canton, Ohio.....	59,139	10	2			6		1		
Charleston, S. C.....	60,427	26	2						4	
Covington, Ky.....	56,520	10	9					2	2	
Duluth, Minn.....	91,913		4					5		
El Paso, Tex.....	51,936	32	4	1	2	3			10	
Eric, Pa.....	73,798		2	1		1		3	23	
Evansville, Ind.....	72,125		11			3		1		
Flint, Mich.....	52,159	13	5	3	1	2				
Fort Worth, Tex.....	99,528	17	2			4			1	
Harrisburg, Pa.....	70,754	23	2					3	1	
Hoboken, N. J.....	76,104	10	2					7		
Johnstown, Pa.....	66,585	19	1			5		3	1	
Kansas City, Kans.....	96,854		2			2		1	2	
Lancaster, Pa.....	59,269			1				3		
Lawrence, Mass.....	95,197	16	3		1	2		2	2	
Little Rock, Ark.....	55,158	12	1			1				
Malden, Mass.....	50,967	13	7	1				1		
Manchester, N. H.....	76,959	25	1		1			2	2	
Mobile, Ala.....	56,536	26				1			2	
Norfolk, Va.....	88,076	30	2					1	1	
Oklahoma, Okla.....	88,158	13	6			2				
Passaic, N. J.....	69,010	14	2					2	1	
Pawtucket, R. I.....	58,156	13	8						2	
Portland, Me.....	63,014	21	1						1	
Rockford, Ill.....	53,761	16								
Sacramento, Cal.....	64,806	18	2							
Saginaw, Mich.....	54,815	17				8		2		
St. Joseph, Mo.....	83,974	29	7			2		2		
San Diego, Cal.....	51,115	15	3		1	4			2	
Schenectady, N. Y.....	95,265	18	1		10	3		3		
Somerville, Mass.....	85,460	10	4			1		1	1	

DIPHTHERIA MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Con.

City Reports for Week Ended Oct. 28, 1916—Continued.

City.	Population as of July 1, 1915 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
From 50,000 to 100,000 inhabitants—Continued.										
South Bend, Ind.	67,030	22	9				4			4
Springfield, Ill.	59,468	24	7	1	1					2
Springfield, Ohio.	50,804	9			1		1			1
Troy, N. Y.	77,738		4	2			2	1		1
Wilkes-Barre, Pa.	75,218	18	3				1		2	1
Wilmington, Del.	93,161	27	1		1		2			
York, Pa.	50,543		1						2	
From 25,000 to 50,000 inhabitants:										
Alameda, Cal.	27,031	5	1				1			
Austin, Tex.	34,016	5	4				3			
Butler, Pa.	26,587	3	5							
Butte, Mont.	42,918	22					1		2	2
Chelsea, Mass.	1 32,452	10	2						4	1
Chicopee, Mass.	28,688	8	2							1
Cumberland, Md.	25,564	8	3	1	1		4			1
Danville, Ill.	31,554	10							1	
Davenport, Iowa.	47,127						4			
East Orange, N. J.	41,155	4	1		1					
Elgin, Ill.	27,844	6					2			1
Everett, Mass.	38,307	4	1						4	
Everett, Wash.	33,767	2								
Fitchburg, Mass.	41,144	7	1		1				8	
Galveston, Tex.	41,076	16	2						2	3
Haverhill, Mass.	47,774	13					2		4	1
Jackson, Mich.	34,730	11					5		1	
Kalamazoo, Mich.	47,364	19	3						1	
Kenosha, Wis.	30,319	9	3		1				1	
Knoxville, Tenn.	38,300		4		10		2		1	
La Crosse, Wis.	31,522	12	3	2			1			1
Lexington, Ky.	39,703	7	15		1		3		8	
Lima, Ohio.	34,644						1			
Lincoln, Nebr.	46,028	8	8				4			1
Long Beach, Cal.	26,012	7					1			
Lorain, Ohio.	35,662		1				7			
Lynchburg, Va.	32,385	8	2		1				4	1
McKeesport, Pa.	46,743	21	4	1			2		1	
Medford, Mass.	25,737	8	1							
Montclair, N. J.	25,550	6							3	
New Castle, Pa.	40,351		2							
Newport, Ky.	31,722	8	1						1	1
Newport, R. I.	29,631	2	2				2		3	2
Newton, Mass.	43,085	9			1					
Niagara Falls, N. Y.	36,240	13	6		1					1
Norristown, Pa.	30,833	8	4		2					
Orange, N. J.	32,524	7							2	
Pasadena, Cal.	43,859	9							3	1
Perth Amboy, N. J.	39,725		1						4	
Pittsfield, Mass.	37,580	12	2						2	
Portsmouth, Va.	38,610	11		1			1			2
Quincy, Ill.	36,764	9			1					1
Quincy, Mass.	37,251	11								2
Racine, Wis.	45,507	11	2				3			
Roanoke, Va.	41,929	12	3		1		1		1	1
San Jose, Cal.	37,994	10	10							
Steubenville, Ohio.	26,631	11	2	3			1		1	
Stockton, Cal.	34,508	9	1		1				2	1
Superior, Wis.	45,285	3	4		2					
Taunton, Mass.	35,957	10	1						1	
Topeka, Kans.	47,914	14	2		2		1			
Waltham, Mass.	30,129	7	4	1						
Watertown, N. Y.	29,384	6			1					
West Hoboken, N. J.	41,893	7	2							1
Wheeling, W. Va.	43,097	13	4	1			3			
Williamsport, Pa.	33,495		8				2			
Wilmington, N. C.	28,264	8					1			
Zanesville, Ohio.	30,406	11	1				1			

1 Population Apr. 15, 1910; no estimate made.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City Reports for Week Ended Oct. 23, 1916—Continued.

City.	Population as of July 1, 1915 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
From 10,000 to 25,000 inhabitants:										
Ann Arbor, Mich.....	14,979	11							8	
Braddock, Pa.....	21,310	8							1	
Cairo, Ill.....	15,593	6	4							2
Clinton, Mass.....	13,075	9							1	1
Coffeyville, Kans.....	16,765		4	2					1	
Concord, N. H.....	22,480	13	3							1
Galesburg, Ill.....	23,923	5								
Kearny, N. J.....	22,753	8			1				3	
Kokomo, Ind.....	20,312	5	1	1	9		1			
Long Branch, N. J.....	15,057	2	1						1	
Morristown, N. J.....	13,158	3								
Nanticoke, Pa.....	22,441	7							3	
Newburyport, Mass.....	15,195	6					1			
New London, Conn.....	20,771	6	2							1
North Adams, Mass.....	22,019	3	1	1	1		2		1	
Northampton, Mass.....	19,846	6	1						1	
Plainfield, N. J.....	23,280	7							1	
Portsmouth, N. H.....	11,602				3					
Rutland, Vt.....	14,624	1	1		11					
Sandusky, Ohio.....	20,160		1		10					
Saratoga Springs, N. Y.....	12,842	5	25				1			
Steelton, Pa.....	15,337	6							3	1
Wilkinsburg, Pa.....	22,361	6					1			
Woburn, Mass.....	15,862	4								

* Population Apr. 15, 1910; no estimate made.

FOREIGN.

CHINA.

Plague-Infected Rats—Hongkong.

During the month of September, 1916, out of 11,074 rats examined at Hongkong, 2 were plague infected.

GREAT BRITAIN.

Measures Against Plague Infection—Bristol.

As has been previously stated,¹ the three cases of plague notified at Bristol, England, during the month of August, 1916, occurred among persons directly connected with the rag warehouse. Search for plague-infected rats outside the warehouse continues to be carried out, but has not resulted in the finding of a plague-rat. Prohibition of distribution of rags was at once enforced, the entire contents of the warehouse were destroyed by fire, and measures of cleansing and disinfection were carried out. More than 1,400 rats from port warehouses and vessels have been examined without the finding of plague infection. The rags stored in the warehouse with which the plague cases were connected were collected in the adjacent counties but no suspicion attaches to the local areas of collection. Sixty-one rats were caught in the warehouse and of these only one was found plague infected. The warehouse rats found comfortable nesting among the rags and apparently were not inclined to scatter. The origin of the one plague-infected rat found has not been determined.

Plague-Infected Rats—Liverpool.

The finding of plague-infected rats has been reported at Liverpool as follows: During the two weeks ended October 7, 1916, out of 520 rats examined, 3 plague-infected rats found; during the two weeks ended October 21, 1916, out of 470 rats examined, 1 plague-infected rat found. The plague rats were taken from dock warehouses. In the case of the last plague rat found previous infection of the warehouse had been noted.

¹Public Health Reports. Sept. 29, 1916, p. 2715.

JAMAICA.

Typhus Fever—Port Antonio.

During the week ended October 28, 1916, a case of typhus fever was notified at Fort Antonio, Jamaica.

The last previously reported case of typhus fever at Port Antonio was reported as occurring during the period from November 29 to December 4, 1915.¹

JAVA.

Batavia and Tandjong Priok Declared Free from Cholera.

The ports of Batavia and Tandjong Priok, Java, were officially declared free from cholera September 6, 1916.

Cholera was declared epidemic at Batavia April 13, 1916.

MEXICO.

Quarantine at Vera Cruz Against Progreso.

According to information dated October 24, 1916, the health authorities at Mexico City have ordered that all persons who embark at Progreso for Vera Cruz shall be quarantined on arrival at Vera Cruz, at a point outside the harbor, for a period to complete eight days from the date of departure from Progreso.

Typhus Fever—Federal District.

During the week ended October 21, 1916, 334 cases of typhus fever were reported in the Federal District of Mexico, including Mexico City.

Typhus Fever—Leon.

Typhus fever was reported present at Leon, State of Guanajuato, October 25, 1916.

Typhus Fever—Zacatecas.

An outbreak of typhus fever was reported October 25, 1916, among troops at Zacatecas, State of Zacatecas. A sanitary brigade was dispatched by the government at Mexico City to take charge of the epidemic.

¹ Public Health Reports, Dec. 24, 1915 p. 3766.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER.

Reports Received During Week Ended Nov. 17, 1916. ¹

CHOLERA.

Place.	Date.	Cases.	Deaths.	Remarks.
Austria-Hungary:				
Bosnia-Herzegovina.....	July 1-8.....	1		
Hungary.....	July 9-15.....	1		
India:				
Bombay.....	Sept. 17-23.....	5	2	
Calcutta.....	Sept. 9-16.....		4	
Karachi.....	Sept. 17-23.....	52	40	
Japan:				
Kobe.....	Oct. 2-8.....	47	18	Aug. 14-Oct. 8, 1916: Cases, 375; deaths, 162.
Osaka.....	Sept. 21-30.....	101	76	Aug. 13-Sept. 30, 1916: Cases, 821; deaths, 392.
Taiwan, Island.....	Sept. 24-30.....	13	3	Present.
Keelung.....	do.....			Total to Oct. 1, 1916: Cases, 63; deaths, 46.
Yokohama.....	Sept. 25-Oct. 8.....	17	15	Total to Oct. 1, 1916: Cases, 125; deaths, 85.
Districts.....	do.....	20	18	
Philippine Islands:				
Manila.....	Sept. 24-30.....	42	24	Not previously reported: Cases, 20; deaths, 1.
Provinces.....				
Albay.....	Sept. 24-30.....	56	24	Sept. 24-30, 1916: Cases, 462; deaths, 304.
Antique.....	do.....	2	1	
Bataan.....	do.....	27	24	
Batangas.....	do.....	17	14	
Bulacan.....	do.....	20	12	
Camarines.....	do.....	24	16	
Cavite.....	do.....	12	10	
Iloilo.....	do.....	192	137	
Laguna.....	do.....	3	3	
Negros Occidental.....	do.....	47	31	
Pampanga.....	do.....	15	14	
Rizal.....	do.....	29	13	
Romblon.....	do.....	1	1	
Zambales.....	do.....	17	4	
Turkey in Asia:				
Trebizond.....	do.....	3	1	

PLAGUE.

China:				
Hongkong.....	Sept. 17-30.....	3	2	
Egypt:				
Cairo.....	Oct. 4.....	1		Jan. 1-Oct. 5, 1916: Cases, 1,695; deaths, 824.
India:				
Bassein.....	Aug. 6-Sept. 2.....		9	Sept. 9-16, 1916: Cases, 4,916; deaths, 3,594.
Bombay.....	Sept. 17-23.....	11	8	
Benzada.....	July 30-Aug. 5.....		1	
Karachi.....	Sept. 17-23.....	1	1	
Moulmein.....	Aug. 6-Sept. 2.....		7	
Prome.....	do.....		32	
Rangoon.....	Sept. 9-16.....	23	19	
Toungoo.....	Aug. 6-Sept. 2.....		6	
Siam:				
Bangkok.....	Sept. 12-18.....	1	1	

SMALLPOX.

Austria-Hungary:				
Austria.....				June 25-July 1, 1916: Cases, 66, July 2-22, 1916: Cases, 175.
Galicia.....	June 25-July 1.....	31		Other Provinces, same period: Cases, 35.
Do.....	July 2-22.....	88		Other Provinces, same period: Cases, 87.
China:				
Chungking.....	Sept. 17-23.....			Present.
Hongkong.....	Sept. 17-30.....	8	7	

¹ From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.

Reports Received During Week Ended Nov. 17, 1916—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Egypt:				
Cairo.....	May 28-June 10....	22	17	
Port Said.....	May 28-June 3....	1	1	
India:				
Bombay.....	Sept. 17-23.....	3	1	
Rangoon.....	Sept. 9-16.....	1		
Mexico:				
Federal district.....	Oct. 15-21.....	8		
Spain:				
Madrid.....	Sept. 1-30.....		26	
Valencia.....	Sept. 24-30.....	1		
Union of South Africa:				
Johannesburg.....	June 25-Sept. 9....	17		

TYPHUS FEVER.

Austria-Hungary:				
Austria.....				June 25-July 1, 1916: Cases, 169. July 2-22, 1916: Cases, 513.
Galicia.....	June 25-July 1....	146		Other Provinces, same period: Cases, 23.
Do.....	July 2-22.....	419		Other Provinces, same period: Cases, 94.
Vienna.....	Sept. 24-Oct. 7....	18	4	
Bosnia-Herzegovina.....	June 18-30.....	21		
Do.....	July 1-7.....	4		
Hungary—				
Budapest.....	Sept. 10-16.....	2		
Egypt:				
Cairo.....	May 28-June 10....	224	107	
Port Said.....	do.....	11	5	
Germany:				
Aix la Chapelle.....	Oct. 1-7.....		1	
Berlin.....	Sept. 24-30.....		2	
Königsberg.....	Oct. 1-14.....	8	5	
Great Britain:				
Dundee.....	Oct. 8-14.....	1	1	
Glasgow.....	Oct. 8-21.....	1	1	
Jamaica:				
Port Antonio.....	Oct. 22-28.....	1		
Mexico:				
Aguascalientes.....	Oct. 31.....			Epidemic.
Federal District.....	Oct. 15-21.....	334		
Leon.....	Oct. 25.....			Present.
Vera Cruz.....	Oct. 9-15.....		1	
Zacatecas, State.....	Oct. 25.....			Epidemic.
Spain:				
Madrid.....	Sept. 1-30.....		1	
Sweden:				
Stockholm.....	Oct. 1-7.....	1		
Turkey in Asia:				
Haifa.....	Aug. 28-Sept. 3....	8	3	
Trebizond.....	Sept. 24-30.....		1	

YELLOW FEVER.

Mexico:				
Merida.....	Oct. 15-21.....	1		
Progreso.....	do.....	1		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.

Reports Received from July 1 to Nov. 10, 1916.

CHOLERA.

Place.	Date.	Cases.	Deaths.	Remarks.
Austria-Hungary.....				Mar. 12-May 6, 1916: Cases, 425; deaths, 155.
Austria.....	Mar. 26-Apr. 8.....	2		
Do.....	July 9-15.....	1		
Bosnia-Herzegovina.....	Mar. 12-May 20.....	398	147	
Hungary.....	Mar. 20-Apr. 2.....	2		
Ceylon:				
Colombo.....	June 25-July 1.....	1	1	May 7-20, 1916: Cases, 43; deaths, 5, from s. s. Hong Kheng from Halfong; total to June 1: Cases, 61; deaths, 37; May 28-June 10, 1916: Cases, 10, from the port.
China:				
Canton.....	Aug. 11-31.....		13	On s. s. Taihei Maru from Hong-kong and Chefoo.
Dairen.....	Aug. 6-12.....	1		
Hongkong.....	Aug. 19-Sept. 2.....	9	9	
Macao.....	Aug. 17.....			Present.
Shanghai.....	Aug. 20-26.....		2	Chinese.
Egypt:				
Suez.....	May 18-20.....	5	2	From s. s. Pei-ho from Bombay.
Tor, quarantine station.....	May 22-June 3.....	112	42	Do.
Germany:				
Hanover.....	Aug. 28-Sept. 2.....		1	
Greece:				
Moschopolis.....	July 25-31.....	15	8	
India:				
Akyab.....	June 11-July 8.....		2	
Bassein.....	Apr. 23-June 10.....		3	
Bombay.....	May 14-July 1.....	21	9	
Do.....	July 2-Sept. 16.....	143	97	
Calcutta.....	May 7-July 1.....		259	
Do.....	July 2-Sept. 9.....		97	
Henzada.....	Apr. 23-July 22.....		7	
Karachi.....	Aug. 28-Sept. 16.....	14	9	
Madras.....	June 25-July 1.....	1	1	
Do.....	July 2-22.....	5	3	
Madura District.....	Aug. 28-Sept. 9.....	6	2	
Mandalay.....	July 23-29.....		1	
Pakokku.....	July 2-8.....		1	
Pegu.....	June 4-10.....		1	
Rangoon.....	May 24-July 29.....	13	9	
Do.....	July 1-Aug. 26.....	2	1	
Indo-China.....				Dec. 1-31, 1915: Cases, 510; deaths, 395. Jan. 1-Mar. 31, 1916: Cases, 2,018; deaths, 1,100.
Provinces—				
Anam.....	Dec. 1-31.....	493	388	
Do.....	Jan. 1-Mar. 31.....	1,753	1,024	
Cambodia.....	Jan. 1-Feb. 29.....	11	10	
Cochin-China.....	Jan. 1-Mar. 31.....	10	4	
Tonkin.....	Dec. 1-31.....	17	7	
Do.....	Jan. 1-Mar. 31.....	244	62	
Saigon.....	May 1-July 2.....	162	74	
Do.....	July 3-Sept. 2.....	69	45	
Japan:				
Kobe.....	Aug. 30-Oct. 1.....	328	117	Since Aug. 14, 1916: Cases, 349; deaths, 149.
Nagasaki.....	Aug. 8-Sept. 24.....	327	160	
Osaka.....	Aug. 30-Sept. 20.....	678	170	Since Aug. 13, 1916: Cases, 705; deaths, 332.
Yokohama.....	Aug. 15.....	6	5	55 cases, with 9 deaths in quarantine, from s. s. Hawaii Maru from Hongkong via ports.
Do.....	Sept. 4-24.....	29	19	Total to Sept. 10, 1916: Cases, 29; deaths, 15.
Suburbs of city.....	Aug. 14-20.....	8	4	
Districts.....	Sept. 4-24.....	54	30	Total to Sept. 24, 1916: Cases, 115; deaths, 67.
Java.....				East Java, Apr. 8-June 30, 1916: Cases, 50; deaths, 35. July 1-Aug. 4: Cases, 13; deaths, 8.
Batavia.....	Apr. 13-June 29.....	89	12	Mid Java, June 3-30, 1916: Cases, 30; deaths, 26. July 1-Aug. 4: Cases, 78; deaths, 65.
Do.....	July 7-13.....	16	2	West Java, Apr. 3-June 29, 1916: Cases, 661; deaths, 409.
Malang.....	Apr. 8-14.....	2	2	July 7-Aug. 17: Cases, 562; deaths, 364.
Malang and Djombang.....	Apr. 28-May 5.....	2	2	
Surabaya residency.....	May 6-19.....	5	2	Including Malang, 2 cases, and Sidoarjo and Malang, 3 cases, with 2 deaths.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.

Reports Received from July 1 to Nov. 10, 1916—Continued.

CHOLERA—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Korea				Sept. 23, 1916: In southern and central Korea, 108 cases.
Chemulpo	Sept. 18	2		
Fusan	Aug. 1-Sept. 2	2	1	
Persia:				
Asterabad	June 10			Present, with 4 or 5 deaths daily.
Enzeli	July 1-Aug. 31	7	5	
Foumen	May 9	3	2	Previously erroneously included in cases at Reht.
Ghazien	June 13	2	1	
Karvin	July 1-Aug. 31	22	29	
Mohammerah	June 12			Present.
Recht	July 1-Aug. 31	19	11	
Tabriz	Aug. 1-31		12	
Teheran	do		2	
Urumiah	July 1-31	25		
Philippine Islands:				
Manila	May 14-July 1	36	25	
Do	Aug. 6-Sept. 23	526	277	Not previously reported: Cases, 52; deaths, 5. July 16-Sept. 16, 1916: Cases, 3,204; deaths, 1,911.
Provinces:				
Albay	July 2-Sept. 23	356	187	
Antique	Sept. 17-23	3	3	
Bataan	July 2-Sept. 23	54	40	
Batangas	July 30-Sept. 23	40	23	
Bulacan	June 18-July 1	17	4	
Do	July 2-Sept. 23	847	465	
Cagayan	June 25-July 1	2	1	
Do	July 2-8	2		
Camarines	June 18-July 1	69	32	
Do	July 2-Sept. 23	945	591	
Cavite	June 11-July 1	14	11	
Do	July 2-Sept. 23	37	30	
Iloilo	Aug. 20-Sept. 23	1,026	674	
Laguna	May 21-July 1	31	20	
Do	July 2-Sept. 23	158	115	
Lanao	May 28-June 3	110	88	
Mindanao	July 16-Aug. 5	19	11	
Mindoro	May 21-27	7	7	
Do	Sept. 3-16	6	4	
Misamis	July 16-Sept. 16	218	119	
Negros Occidental	Sept. 3-23	78	52	
Nueva Ecija	Sept. 10-23	3	2	
Pampanga	July 9-Sept. 23	164	140	
Rizal	May 24-July 1	11	9	
Do	July 2-Sept. 23	422	242	
Romblon	June 18-July 1	68	39	
Do	July 9-Sept. 9	23	19	
Samar	Aug. 28-Sept. 23	12	9	
Tayabas	June 10-24	11	8	
Do	Aug. 6-Sept. 9	2	1	
Zambales	Aug. 20-Sept. 23	62	14	
Siam:				
Bangkok	May 15-27	22	21	
Do	July 16-Aug. 12	5	5	
Straits Settlements:				
Singapore	May 27-June 24	8	3	
Do	Aug. 13-19	1	1	
Turkey in Europe:				
Constantinople	May 19-July 6	118	63	Present among soldiers June 14.
Turkey in Asia:				
Adana	June 16-July 9	106	60	
Aleppo	June 15-25	47	16	
Bagdad	June 15-July 5	78	18	
Beirut	July 14-19	39	17	
Damascus	June 16-July 3	77	50	
Jaffa	June 17-25	67	39	
Do	July 1-29	151	63	
Mersina	Aug. 6-Sept. 9	7	2	
Smyrna	June 15-28	22	13	Epidemic. Estimated number cases daily, 50.
Trebizond	Aug. 6-Sept. 23	52	12	
At sea:				
Steamship Hong-Kheng	Apr. 27-May 9	17	14	En route from Haifong, Indo-China, to Colombo.
Steamship Pei-ho	Apr. 19-30	1	1	From Saigon, Indo-China, for Colombo.
Do	May 5-17	8	8	From Colombo for Suez.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.

Reports Received from July 1 to Nov. 10, 1916—Continued.

PLAGUE.

Place.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Pernambuco, State.....	Jan. 1-Mar. 31.....			Several cases.
Ceylon:				
Colombo.....	Apr. 30-July 1.....	49	46	
Do.....	July 2-Sept. 9.....	67	63	
Chile:				
Mejillones.....	May 28-June 3.....	1		
Antofagasta.....	June 4-July 22.....	2		
China:				
Amoy.....	July 16-Aug. 19.....			Present.
Canton.....	Aug. 1-10.....		3	
Hongkong.....	May 28-June 30.....	7	7	Mar. 19-25: Cases, 2; deaths, 2.
Do.....	July 23-Sept. 16.....	4	3	
Ecuador:				
Ambato.....	May 1-31.....			Epidemic.
Bahia.....	do.....			Country district, vicinity of Bahia.
Daule.....	June 1-30.....	4	2	
Guayaquil.....	May 1-June 30.....	10	3	
Do.....	July 1-Aug. 31.....	25	9	
Manta.....	May 1-31.....			Country district, vicinity of Manta.
Santa Rosa.....	Aug. 1-31.....	1		
Egypt.....				Jan. 1-Aug. 31, 1916: Cases, 1,690; deaths, 823. Jan. 1-June 29, 1916: Cases, 1,634; deaths, 792. Imported.
Alexandria.....	May 26-Sept. 23.....	48	28	
Cairo.....	July 10.....	1		
Port Said.....	May 7-June 28.....	11	10	
Do.....	July 20-Aug. 3.....	5	4	
Provinces—				
Assiout.....	May 27-June 29.....	9	8	
Beni Souef.....	May 26-June 25.....	34	15	
Do.....	July 1-10.....	2	1	
Fayoum.....	May 26-June 30.....	112	45	
Do.....	July 1-Aug. 3.....	9	2	
Galioubeh.....	June 7.....	1		
Girgeh.....	June 9-21.....	3	1	
Do.....	July 7-10.....	7	7	
Menoufieh.....	June 12-30.....	9	4	
Do.....	July 1-31.....	5	3	
Minieh.....	May 29-June 30.....	37	14	
Do.....	July 3-10.....	5	2	
Great Britain:				
Bristol.....	Aug. 18-31.....	3		
Hull.....	Aug. 19-31.....	2	1	
Liverpool.....	Sept. 22-Oct. 6.....	6	3	
Greece:				
Island of Chios—				
Mitylene.....	Sept. 29.....			Present.
Volo.....	do.....			Slight epidemic.
India.....				May 7-Sept. 9, 1916: Cases, 25,842; deaths, 18,294. ¹
Bassein.....	Apr. 23-July 29.....		242	
Bombay.....	May 14-July 1.....	290	264	
Do.....	July 2-Sept. 16.....	128	108	
Calcutta.....	May 7-July 1.....		14	
Henzada.....	Apr. 23-July 1.....		14	
Do.....	July 9-22.....		4	
Karachi.....	May 14-July 1.....	72	61	
Do.....	July 2-Sept. 16.....	10	11	
Madras Presidency.....	May 14-June 24.....	139	94	
Do.....	July 9-Sept. 16.....	1,694	1,120	
Mandalay.....	May 14-June 3.....		1	
Moulmein.....	Apr. 23-June 10.....		37	
Do.....	July 2-29.....		69	
Pegu.....	June 11-July 15.....		3	
Prome.....	Apr. 23-May 20.....		1	
Do.....	July 2-29.....		39	
Rangoon.....	Apr. 23-July 1.....	467	440	Apr. 16-22, 1916: Cases, 54;
Do.....	July 2-Sept. 9.....	256	236	deaths, 52.
Toungoo.....	June 25-July 1.....		2	
Do.....	July 9-29.....		9	

¹ Reports for weeks ended May 20 and 27, 1916, not received.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.

Reports Received from July 1 to Nov. 10, 1916—Continued.

PLAGUE—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Indo-China.....				Dec. 1-31, 1915: Cases, 90; deaths, 70. Jan. 1-Mar. 31, 1916: Cases, 290; deaths, 191.
Provinces—				
Anam.....	Dec. 1-31.....	36	20	
Do.....	Jan. 1-Mar. 31.....	131	93	
Cambodia.....	Dec. 1-31.....	27	36	
Do.....	Jan. 1-Feb. 29.....	77	71	
Cochin-China.....	Dec. 1-31.....	4	1	
Do.....	Jan. 1-Mar. 31.....	2	27	
Tonkin.....	Dec. 1-31.....	23	23	
Saigon.....	May 15-July 2.....	55	30	
Do.....	July 24-Sept. 2.....	16	7	
Java:				
Residences—				
Kediri.....	Apr. 9-May 19.....	18	18	
Do.....	July 22-23.....	2	2	
Paseroean.....	Apr. 9-June 30.....	13	12	
Do.....	July 1-28.....	4	4	
Surabaya.....	Apr. 9-June 30.....	28	25	
Do.....	July 1-Aug. 4.....	14	13	
Surakarta.....	Apr. 9-June 30.....	15	24	
Japan:				
Taiwan—				
Tamsui.....	July 15-Sept. 23.....	3	3	17 miles from capital city.
Yokkaichi.....	Oct. 19.....			Present.
Mauritius.....	Apr. 15-June 21.....	6	8	
Persia:				
Recht.....	May 2-19.....	20	14	
Siam:				
Bangkok.....	Apr. 30-July 1.....	66	59	
Do.....	July 2-Sept. 9.....	45	38	
Straits Settlements:				
Singapore.....	Apr. 30-July 1.....	5	1	
Do.....	July 2-Sept. 2.....	2	4	
Union of South Africa:				
Orange Free State.....	Jan. 23-Mar. 26.....	36	23	

SMALLPOX.

Australia:				
New South Wales.....				Aug. 4-Sept. 15, 1916: Cases, 11.
Angledool.....	July 21-Aug. 3.....	1	1	
Burren Junction.....	Sept. 1-15.....	1	1	
Guildford.....	June 9-22.....	2	2	
Lake Macquarie.....	Aug. 4-17.....	2	2	
Narrabri.....	May 26-June 7.....	8	8	
Do.....	July 7-Aug. 31.....	26	1	
Swansea.....	Aug. 4-16.....	1	1	
Sydney.....	June 23-30.....	1	1	
Do.....	July 1-Aug. 3.....	4	4	
Tamworth.....	June 9-22.....	1	1	
Do.....	July 7-20.....	1	1	
Walgett.....	July 21-Aug. 3.....	6	6	
Austria-Hungary:				
Austria.....				Feb. 13-May 20, 1916: Cases, 2,175.
Galicia, Province.....	Apr. 23-May 20.....	464		
Prague.....	July 2-Sept. 9.....	6	2	
Vienna.....	May 27-July 1.....	4	1	
Do.....	July 9-Aug. 5.....	3		
Hungary—				
Budapest.....	May 21-July 1.....	38	15	
Do.....	July 2-Sept. 9.....	1	1	
Brazil:				
Bahia.....	July 2-Aug. 26.....	8	8	
Para.....	July 2-8.....		4	
Rio de Janeiro.....	Apr. 9-June 17.....	94	18	
Do.....	July 9-Sept. 30.....	142	31	
Santos.....	May 8-14.....		1	
British East Africa:				
Mombasa.....	Apr. 24-May 31.....	4	2	
Do.....	July 1-31.....		1	
Canada:				
Ontario—				
Fort William and Port Arthur.....	July 9-15.....	1		
Niagara Falls.....	July 2-8.....	1		
Toronto.....	June 25-July 29.....	3		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.

Reports Received from July 1 to Nov. 10, 1916—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Ceylon:				
Colombo.....	May 7-June 3.....	4		
China:				
Amoy.....	Aug. 13-19.....			Present in vicinity.
Antung.....	May 22-June 18.....	2	1	
Canton.....	Aug. 1-10.....		1	
Chunking.....	May 7-June 24.....			
Do.....	July 2-Aug. 21.....			Present.
Dairen.....	May 21-July 1.....	2	1	Do.
Do.....	July 16-Aug. 26.....	3	2	
Foochow.....	May 7-27.....			Do.
Do.....	July 2-Aug. 5.....			Do.
Harbin.....	May 2-June 18.....	3	1	
Do.....	July 9-Aug. 13.....	3	2	
Hongkong.....	May 7-June 24.....	68	50	Mar. 19-25: Cases, 16; deaths, 13.
Do.....	July 28-Sept. 16.....	22	20	
Nanking.....	June 11-Aug. 19.....			Do.
Tientsin.....	May 14-July 1.....	45	11	
Do.....	July 2-Sept. 9.....	4	1	
Cuba:				
Cienfuegos.....	Sept. 24-30.....	2		
Egypt:				
Alexandria.....	May 28-June 17.....	4	2	
Cairo.....	Jan. 22-May 27.....	184	57	
Port Said.....	Mar. 12-May 27.....	6	6	
France:				
Paris.....	May 14-July 1.....	9		
Do.....	July 2-8.....	1		
Germany:				
Breslau.....	May 21-27.....	1		
Hamburg.....	June 11-17.....	1		
Konigsburg.....	July 2-Sept. 2.....	4		
Great Britain:				
Cardiff.....	June 4-17.....	1	1	
London.....	do.....	1		
Southampton.....	July 31-Aug. 5.....	1		
Greece:				
Athens.....	Apr. 1-June 13.....	178	37	
Do.....	July 9-23.....			Present. Estimated occurrence 10 cases weekly.
India:				
Bassein.....	May 7-June 10.....		2	
Bombay.....	May 14-July 1.....	153	79	
Do.....	July 2-Sept. 16.....	53	35	
Calcutta.....	May 7-June 3.....		3	
Do.....	July 2-Aug. 5.....		2	
Karachi.....	Aug. 6-Sept. 2.....	5	4	
Madras.....	May 14-July 1.....	139	42	
Do.....	July 2-Sept. 16.....	118	53	
Rangoon.....	Apr. 23-July 1.....	260	135	
Do.....	July 2-Sept. 9.....	17	6	
Indo-China:				
Provinces—				
Anam.....	Dec. 1-31.....	48		Dec. 1-31, 1915: Cases, 74; deaths, 14. Jan. 1-Mar. 31, 1916: Cases, 399; deaths, 27.
Do.....	Jan. 1-Mar. 31.....	68	5	
Cambodia.....	Dec. 1-31.....	19	13	
Do.....	Jan. 1-Mar. 31.....	38	14	
Cochin China.....	Dec. 1-31.....	1	1	
Do.....	Feb. 1-Mar. 31.....	23	2	
Tonkin.....	Dec. 1-31.....	6	6	
Do.....	Jan. 1-Mar. 31.....	270		
Saigon.....	July 24-Aug. 13.....	4	4	
Japan:				
Kobe.....	May 29-June 25.....	24	4	
Do.....	July 24-Sept. 3.....	11	2	
Nangasaki.....	June 26-July 2.....	1	1	
Java:				
Batavia.....	Apr. 13-June 29.....	31	9	East Java, Apr. 8-June 30, 1916: Cases, 88; deaths, 11. July 1-Aug. 4: Cases, 42; death, 1.
Do.....	June 30-July 13.....	6	4	Mid Java, Apr. 1-June 30, 1916: Cases, 233; deaths, 47. July 1-Aug. 4: Cases, 56; deaths, 14.
Samarang.....	May 13-19.....	2	2	West Java, Apr. 13-June 29: Cases, 278; deaths, 59. June 30-Aug. 17: Cases, 253; deaths, 34.
Surabaya.....	May 9-June 16.....	2	1	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.

Reports Received from July 1 to Nov. 10, 1916—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Malta	Apr. 1-30	7	1	
Mexico:				
Aguascalientes	June 12-July 2		33	
Do.	July 3-Oct. 1		44	
Frontera	May 28-June 10	4	1	
Guadalajara	June 11-17	35	9	
Laguna del Carmen	Oct. 10	30		
Mazatlan	May 31-June 6		4	
Mexico City	Aug. 28-Oct. 14	69		
Tenosique	June 14			175 miles south of Frontera: Epidemic among troops.
Vera Cruz	June 4-July 2		9	
Do.	July 3-Sept. 3		4	
Netherlands:				
Amsterdam	May 28-June 3	1		
Philippine Islands:				
Manila	do	1		
Do.	July 1-8	3		
Porto Rico:				June 19-25, 1916: Cases, 33.
Aguas Buenas	June 19-25	5		
Arecibo	do	2		
Do.	Aug. 7-13	1		
Bayamon	June 19-July 2	2		
Naranjito	June 26-July 2	4		
Rio Piedras	do	1		
San Juan	do	24		
Toa Alta	do	12		
Portugal:				
Lisbon	May 21-July 1	15		
Do.	July 9-Aug. 26	9		
Russia:				
Moscow	Apr. 30-July 1	222	59	
Do.	July 2-Sept. 2	82	143	
Petrograd	Apr. 23-July 1	162	35	
Do.	July 2-Sept. 28	77	18	
Riga	Apr. 6-May 31	1	1	
Do.	July 1-22	2		Apr. 1-30, 1916: 1 case. June 1-30, 1916: 1 case.
Siam:				
Bangkok	May 24-30	2		
Spain:				
Cadiz	July 1-31		1	
Madrid	May 1-31		13	June 1-30, 1916: Cases, 10.
Do.	July 1-Aug. 31		34	
Malaga	May 1-31		7	
Seville	May 1-June 30		5	
Do.	Aug. 1-31		4	
Valencia	May 21-July 1	12	4	
Do.	July 8-Sept. 2	8		
Straits Settlements:				
Penang	May 14-20	3		
Singapore	Apr. 30-July 1	5	3	
Do.	July 16-Aug. 26	5	2	
Switzerland:				
Basel	May 13-July 1	29		
Do.	July 2-Sept. 30	14		
Turkey in Asia:				
Trebizond	Sept. 17-23	1		
Union of South Africa:				
Durban	June 1-30	1		
Johannesburg	May 28-June 3	1		
Venezuela:				
Maracaibo	Sept. 2-22		3	
Zanzibar:				
Zanzibar	May 12	1		From s. s. Dilmara.
At sea:				
Steamship Katuna				Case of smallpox landed at Colombo, Ceylon, May 12, 1916. Vessel arrived May 27, at Fremantle, Australia, was ordered to quarantine, and proceeded to Melbourne direct for disinfection.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.

Reports Received from July 1 to Nov. 10, 1916—Continued.

TYPHUS FEVER.

Place.	Date.	Cases.	Deaths.	Remarks.
Austria-Hungary:				
Austria:				Feb. 13-May 20, 1916: Cases, 2,407.
Galicia, province	Apr. 22-May 20	1,311		
Vienna	July 2-15	3		
Hungary:				Feb. 21-Mar. 5, 1916: Cases, 35; deaths, 7.
Budapest	May 21-June 24	14	2	
Do	July 2-Sept. 9	5	1	
Belgium:				
Liege	Aug. 12-19		1	
Canada:				
New Brunswick—				
St. John	July 29	4		
Canary Islands:				
Santa Cruz de Teneriffe	July 31-Aug. 5		1	
China:				
Antung	June 19-25	1	1	
Do	July 22-Sept. 10	4		
Harbin	May 2-8	1		
Do	July 3-16	1		
Tientsin	May 14-20		1	
Egypt:				
Alexandria	May 21-July 1	235	93	
Do	July 2-Sept. 23	163	71	
Cairo	Jan. 8-May 27	900	400	
Port Said	Mar. 18-May 27	41	21	
Germany:				
Aix la Chapelle	July 2-Aug. 12		2	
Barmen	Aug. 13-19		1	
Berlin	June 18-24		1	
Do	July 16-Sept. 2		11	
Bremen	July 16-Sept. 2	12	2	
Breslau	Aug. 15-21	3		
Chemnitz	May 28-June 3		1	
Frankfort on the Main	June 11-17		1	
Do	Aug. 27-Sept. 2		1	
Hanover	May 7-27	4	1	
Do	July 1-Aug. 5	7	2	
Königsberg	June 4-10	1		
Do	July 9-Aug. 26	13		
Leipzig	June 4-10		1	
Stettin	July 16-Aug. 19		3	
Great Britain:				
Belfast	July 16-Sept. 9	12	4	
Dublin	Oct. 1-7	2		
Glasgow	July 9-Sept. 30	9	6	
Greece:				
Athens	July 24-Aug. 21		2	
Saloniki	May 1-July 2		61	
Do	July 3-Sept. 10		160	
Italy:				
Palermo	June 29-July 5	1	1	
Japan:				
Hakodate	July 16-22	2		
Tokyo	May 22-July 25	114		
Java:				Jan. 1-July 25, 1916: Cases, 468. East Java, Apr. 8-June 30, 1916: Cases, 24; deaths, 9. July 22-Aug. 4: Case, 1. Mid-Java, Apr. 1-June 30, 1916: Cases, 76; deaths, 18. July 1-Aug. 4: Cases, 26; deaths, 4. West Java, Apr. 13-June 29, 1916: Cases, 118; deaths, 18. July 7-Aug. 17: Cases, 37; deaths, 7.
Batavia	Apr. 13-June 29	46	13	
Do	July 7-27	24	4	
Samarang	Apr. 1-June 30	20	8	
Surabaya	Apr. 8-May 12	6	6	
Do	July 1-7	1		
Mexico:				
Agascalientes	June 12-July 2		32	
Do	July 3-Oct. 1		181	
Chihuahua	Sept. 7	40		Sept. 20: Estimated number of cases, 100. Present.
Durango	Sept. 1			
Juarez	Sept. 7-20	18		
Guadalaajara	June 11-17	4	1	
Mexico City	Aug. 28-Oct. 14	1,519		
Nuevo Larado	Oct. 28	1		
San Luis Potosi	Oct. 21			
Tampico	Oct. 11-30		1	In person from Guanajuato. Epidemic.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.

Reports Received from July 1 to Nov. 10, 1916—Continued.

TYPHUS FEVER—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Mexico—Continued.				
Vera Cruz.....	June 4-9.....		2	
Do.....	July 24-Sept. 24.....		8	
Zacatecas, State.....				Sept. 7: Prevalent.
Netherlands:				
Rotterdam.....	July 30-Aug. 5.....		1	
Norway:				
Bergen.....	.....do.....		1	
Russia:				
Moscow.....	Apr. 30-July 1.....	909	52	
Do.....	July 9-Sept. 2.....	299	34	
Petrograd.....	Apr. 23-July 1.....	59	13	
Do.....	July 3-Sept. 2.....	32	5	
Riga.....				June 1-30, 1916: 1 case.
Spain:				
Madrid.....	Aug. 1-31.....		1	
Sweden:				
Stockholm.....	June 21-27.....	1		
Do.....	July 9-Sept. 16.....	8		
Switzerland:				
Basel.....	July 24-Aug. 26.....	8		
Geneva.....	May 21-27.....	1		
Zurich.....	July 23-Sept. 2.....	5		
Turkey in Asia:				
Adana.....	May 13-June 25.....			Present.
Do.....	July 2-8.....			Do.
Bagdad.....	June 27.....			Do.
Haifa.....	Apr. 24-June 11.....	35	13	
Do.....	July 10-Aug. 27.....	70	31	
Jaffa.....	Apr. 23-June 25.....		47	Mar. 19-Apr. 1: Present.
Mersina.....	May 7-June 25.....	9		Apr. 2-8: Cases, 3. May 6-20: Many cases.
Do.....	July 2-8.....			Do.
Tarsus.....	May 13-27.....			Present.
Do.....	July 2-8.....			Do.
Trebizond.....	Aug. 6-Sept. 23.....	3	2	

YELLOW FEVER.

Barbados.....	Sept. 17-30.....	6	5	
Ecuador:				
Babahoyo.....	June 1-30.....	2		
Guayaquil.....	May 1-June 30.....	76	51	
Do.....	July 1-Aug. 31.....	73	44	
Milagro.....	June 1-30.....	1	1	
Do.....	July 1-Aug. 31.....	3	1	
Naranjito.....	Aug. 1-31.....	2	1	
Mexico:				
Campeche.....	Sept. 15.....	1		
Merida.....	July 1-Oct. 14.....	28	9	
Progreso.....	Aug. 13-Sept. 2.....	2	1	
Tuxpan.....	Oct. 31.....			Present.

SANITARY LEGISLATION.

STATE LAWS AND REGULATIONS PERTAINING TO PUBLIC HEALTH.

MASSACHUSETTS.

Milk—Sale—Permit Required. (Ch. 228, Act May 17, 1916.)

SECTION 1. Section 1 of chapter 744¹ of the acts of the year 1914 is hereby amended by inserting after the word "the," in the seventh line, the words "milk and of the," and by inserting after the word "produced" in the eighth line, the words "and handled," and by striking out all after the word "for," where it first occurs in the fourteenth line, and inserting in place thereof the words "said permit or for said inspection," so as to read as follows:

"SECTION 1. It shall be unlawful for any producer of milk or dealer in milk to sell or deliver for sale in any city or town in the Commonwealth any milk produced or dealt in by him without first obtaining from the board of health of such city or town a permit authorizing such sale or delivery. Said boards of health are hereby authorized to issue such permits after an inspection, satisfactory to them, of the milk and of the place in which and of the circumstances under which such milk is produced and handled has been made by them or by their authorized agent. Any permit so granted may contain such reasonable conditions as said board may think suitable for protecting the public health and may be revoked for failure to comply with any of such conditions. No charge shall be made to the producer for said permit or for said inspection."

Births, Deaths, and Marriages—Appropriation for Keeping of Indexes. (Ch. 32, Resolve Mar. 31, 1916.)

Resolved, That there may be allowed and paid out of the treasury of the Commonwealth a sum not exceeding \$5,000, to be expended under the direction of the secretary of the Commonwealth, for the purpose of making suitable provision in his office for the indexes of births, marriages, and deaths.

NEW JERSEY.

Poliomyelitis—Repeal of Regulations Governing. (Reg. Dept. of H., Oct. 3, 1916.)

CHAP. 3. REGULATION 1. Regulations 1, 2, 3, 4, and 5 of Chapter 2² of the State sanitary code, which chapter was adopted August 8, 1916, be and the same are hereby repealed.

[This chapter was effective Oct. 3, 1916.]

¹ Public Health Reports Reprint 279, p. 84.

² Public Health Reports, Oct. 6, 1916, p. 2812.

SOUTH CAROLINA.

Wassermann Blood Test—Free by State Board of Health. (Act 551, Apr. 6, 1916.)

SECTION 1. *Test to be free.*—That the State board of health is required to make all Wassermann blood tests without charge as in case of other blood tests now provided for by law.

State Board of Health—Appropriations for 1916. (Act 561, Feb. 19, 1916.)

SECTION 1. That the following sums of money, if so much be necessary, be, and the same are hereby, appropriated out of the State treasury to meet the ordinary expenses of the State government for the several objects and purposes specified during the fiscal year beginning January 1, 1916, and a tax of 6½ mills upon all taxable property in the State is hereby levied to defray the same, and such other indebtedness as may be created by the present general assembly.

* * * * *
SEC. 18. *Health department*—

Item 1. Salary of State health officer-----	\$3, 000. 00
Item 2. Salary of clerk-----	720. 00
Item 3. Salary of janitor-----	456. 25
Item 4. Director of State laboratory-----	2, 500. 00
Item 5. Bacteriologist for laboratory-----	1, 500. 00
Item 6. Contingent fund for contagious diseases-----	20, 000. 00
Item 7. Expenses, State board of health-----	2, 000. 00
Item 8. Printing, postage, and stationery-----	1, 000. 00
Item 9. Maintenance, tuberculosis camp-----	7, 040. 00
Item 10. Tuberculosis camp (three free beds for men)-----	1, 000. 00
Item 11. Maintenance of bureau of vital statistics-----	5, 000. 00
Item 12. Traveling expenses of State health officer-----	1, 000. 00
Item 13. Two units for intensive county health work-----	3, 600. 00
Item 14. Female ward for tuberculosis camp-----	5, 000. 00
Item 15. Tuberculosis camp (three free beds for women)-----	1, 000. 00
Item 16. Deficit for diphtheria antitoxin-----	759. 00
Total-----	55, 575. 25

* * * * *
VIRGINIA.**Rabies—Care, Treatment, and Transportation of Persons Bitten by Suspected Animals—Counties Authorized to Make Appropriations. (Ch. 384, Act Mar. 20, 1916.)**

1. That the board of supervisors of any county may appropriate out of the county funds a sum sufficient for the care, treatment, and transportation of any person of such county who has been bitten by an animal suspected of having rabies or hydrophobia, if such person is not able to pay such expense. Any such person injured as aforesaid may be sent to any hospital or sanatorium either within or without this State, at the discretion of the board of supervisors to remain such time as said board may determine.

Common Towels—Prohibited in Public Places. (Ch. 278, Act Mar. 17, 1916.)

1. That it shall be unlawful for any person, firm, or corporation to place, furnish, or keep in place in any hotel, office building, railway train, railway station, public or private school, public lavatory or washroom any towel for the

common public use, and no person, firm, or corporation in charge or control of any such place shall permit in such place the use of the common towel.

2. The term "common towel" as used herein shall be construed to mean "roller towel" and towels intended or available for common use by more than one person without being laundered after such use.

3. Any person, firm, or corporation violating any of the provisions of this act shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than \$5 nor more than \$50.

Milk—Condensed, Evaporated, and Concentrated—Definition. (Ch. 454, Act Mar. 22, 1916.)

1. That section 5 of an act entitled an act to prevent deception in the sale of ice cream and to establish standards for the same, defining condensed milk and providing for its sale, approved February 29, 1912, be amended and reenacted so as to read as follows:

5. Condensed milk, evaporated milk, concentrated milk is the product resulting from the evaporation of a considerable portion of the water from the whole, fresh, clean lacteal secretion obtained by the complete milking of one or more healthy cows, properly fed and kept, excluding that obtained within 15 days before and 10 days after calving, and contains, all tolerances being allowed for, not less than 25.5 per cent of total solids and not less than 7.8 per cent of milk fat.

Foodstuffs—Unwholesome—Sale Prohibited. (Ch. 9, Act Feb. 5, 1916.)

1. That it shall be unlawful for any person, firm, or corporation to sell or to offer or expose for sale for human food any article which has been prepared, handled, or kept where the sanitary conditions are such that the article is rendered unhealthy, unwholesome, deleterious, or otherwise unfit for human food or which consists in whole or in part of deceased, filthy, decomposed, or putrid animal or vegetable matter.

2. The dairy and food commissioner, his agents or assistants, and all peace and health officers shall have the power and are required to seize any and all articles which are offered or exposed for sale for human food which have been prepared, handled, or kept where the sanitary conditions are such that the article is rendered unhealthy, unwholesome, deleterious, or otherwise unfit for human food or which consist in whole or in part of diseased, filthy, decomposed, or putrid animal or vegetable matter, and shall deliver the same forthwith to and before the nearest police judge or justice of the peace, together with all information obtained, and said police judge or justice of the peace shall, upon sworn complaint being filed, issue warrant for the arrest of any person charged in any such complaint with a violation of the provisions of this act and shall proceed to try the case. Any person, firm, or corporation who shall violate any of the provisions of this act shall be guilty of a misdemeanor, and upon conviction shall be fined not less than \$10 nor more than \$100, and the article or articles of food in question shall be destroyed.

3. The dairy and food commissioner, his agents or assistants, and all peace and health officers in the execution of the provisions of this act, shall have full right to enter and inspect all places in which any articles of human food are stored, offered, or exposed for sale, and any person, firm, or corporation who shall hinder or obstruct any of the said officers in the discharge of the authority or duty imposed by the provisions of this act shall be guilty of a violation of the same.

Foodstuffs—Transportation or Storage Under Insanitary Conditions Prohibited. (Ch. 12, Act Feb. 5, 1916.)

1. That it shall be unlawful for any person, firm, or corporation, or for any transportation company, express company, railroad company, or steamboat company, or any common carrier to permit insanitary conditions to exist in the transportation or storage of an article of food whereby such article of food may become contaminated from being so transported or stored in insanitary surroundings.

2. That the term "food" as used in this act shall include all articles used for food, drink, confectionery, or condiment, by man or other animals, whether simple, mixed, or compound.

3. That any person, firm, or corporation who shall violate any of the provisions of this act shall be guilty of a misdemeanor, and upon conviction shall be punished by a fine of not less than \$5 nor more than \$100 and costs of prosecution, or by imprisonment in the county or city jail not to exceed 90 days, or until such fine and cost are paid, or by both fine and imprisonment at the discretion of the court.

4. The dairy and food commissioner is hereby charged with the enforcement of this act, and he and his assistants or agents shall have full right to enter and inspect all stores, warehouses, freight or express cars, steamboats or steamships, trucks, drays, wagons, and any and all means or places of transportation or storage of articles of food; and any person, firm, or corporation who shall hinder or obstruct the dairy and food commissioner, his assistants, or agents in the discharge of the authority or duty imposed upon him or them by the provisions of this act shall be guilty of a violation of the same.

5. That whenever any article of food is transported or stored under insanitary conditions, the proceedings for the enforcement of the penalties and punishments fixed for violations of this act may be instituted and maintained in any county or city through which or in which such article of food has been or is so transported or stored under insanitary conditions as aforesaid.

Foodstuffs—Adulteration and Misbranding. (Ch. 422, Act Mar. 21, 1916.)

1. That section 7 of an act entitled an act to prevent the manufacture or sale of adulterated, misbranded, poisonous, or deleterious foods or liquors, and to repeal an act to prevent the sale of adulterated and misbranded foods in the State of Virginia, approved February 27, 1900, approved March 14, 1908, be amended and reenacted so as to read as follows:

SEC. 7. That the term "misbranded" as used herein shall apply to all articles of food, or articles which enter into the composition of food, the package or label of which shall bear any statement, design, or device regarding such article or the ingredients or substance contained therein which shall be false or misleading in any particular, and to any food product which is falsely branded as to the State, Territory, or country in which it is manufactured or produced.

That for the purpose of this act an article shall also be deemed misbranded:

First. If it be an imitation of, or offered for sale under the distinctive name of, another article.

Second. If it be labeled or branded so as to deceive or mislead the purchaser, or purport to be a foreign product when not so, or if the contents of the package as originally put up shall have been removed in whole or in part, and other contents shall have been placed in such package, or if it fail to bear a statement on the label of the quantity or proportion of any morphine, opium, cocaine, heroin, alpha or beta eucaine, chloroform, cannabis indica, chloral hydrate,

or acetanalide or any derivative or preparation of any such substance contained therein.

Third. If in package form, and the quantity of the contents be not plainly and conspicuously marked on the outside of the package in terms of weight, measure, or numerical count: *Provided, however,* That such reasonable variations shall be permitted, and tolerances and also exemptions as to small packages as shall be or are established by rules and regulations made in accordance with the provisions of section 10 of the said act.

Fourth. If the package or its label shall bear any statement, design, or device regarding the ingredients or substance contained therein, which statement, design, or device shall be false or misleading in any particular: *Provided,* That an article of food which does not contain any added poisonous or deleterious ingredients shall not be deemed to be adulterated or misbranded in the following cases:

First. In the case of mixtures or compounds which may be now or from time to time hereafter known as articles of food under their own distinctive names, and not an imitation of, or offered for sale under the distinctive name of, another article of food, if the name be accompanied on the same label or brand with a statement of the place where said article has been manufactured or produced.

Second. In the case of articles labeled, branded, or tagged so as to plainly indicate that they are compounds, imitations, or blends, and having the word "compound," "imitation," or "blend," as the case may be, plainly stated on the package in which such article is offered for sale: *Provided,* The labeling is according to the rules prescribed by the dairy and food commissioner with the approval of the commissioner and the board of agriculture and immigration.

Provided, That the term "blend" as used herein shall be construed to mean a mixture of like substances, not excluding harmless coloring or flavoring ingredients used for the purpose of coloring or flavoring only: *And provided further,* That nothing in this act shall be construed as requiring or compelling proprietors or manufacturers of proprietary foods which contain no unwholesome added ingredients to disclose their trade formulas, except in so far as the provisions of this act may require to secure freedom from adulteration and misbranding.

Slaughterhouses, Packing Houses, and Similar Establishments—Sanitary Regulation—Permit Required. (Ch. 50, Act Feb. 17, 1916.)

1. That the following rules and regulations and standards are hereby established for the sanitation of slaughterhouses, abattoirs, packing houses, sausage factories, rendering plants or other places where animals are slaughtered for sale for human food or where animal carcasses, or parts thereof, are prepared for human food:

First. Every building or room used as a slaughterhouse, abattoir, packing house, sausage factory, rendering plant, or similar establishment shall be properly lighted, drained, plumbed and ventilated and conducted with due regard for the purity and wholesomeness of the meat food products therein produced and with strict regard to the influences of such conditions upon the health of the operatives, employees, and clerks.

Second. The floors, side walls, ceilings, receptacles, implements, machinery, and the clothing of the operatives, shall at all times be kept in a clean, healthful and sanitary condition. The doors, windows, and other openings, during the fly season, shall be fitted with self-closing screen doors and wire window screens

of not coarser than fourteen-mesh wire gauze, and the meat food products in the process of preparation, packing, storing or distribution, shall be securely protected from flies, dust, dirt, and from all other foreign or injurious contamination.

Third. The sleeping places for persons employed in such establishments shall be separate and apart from the room in which meat food products are manufactured, packed, stored, or distributed. No person shall be permitted to work in any such establishment who is known to be afflicted with any contagious or infectious disease, or any skin disease. Every such establishment shall be provided with a convenient washroom and toilet of sanitary construction, but such toilet shall be entirely separate and apart from any room used for the preparation, manufacture or storage of meat food products. Every room or compartment in which meat or meat food products are prepared, cured, rendered, stored, packed, or otherwise handled, shall be free from odors from toilets, catch-basins, tankrooms, casing departments, or from hides, or other injurious contamination. All water and ice used in the preparation of carcasses, meats, or meat food products shall be pure, clean, and wholesome.

Fourth. No swine shall be maintained at or near any slaughterhouse, and the offal from the slaughter of animals shall not be fed, unless it be first subjected to proper tankage; and every slaughterhouse or abattoir shall be equipped with adequate facilities for the tankage of the offal incident to the slaughter of animals, and all the gross offal except the casings resulting from the slaughter of animals shall be tanked.

2. The dairy and food commissioner, by and with the approval of the board of agriculture and immigration of Virginia is hereby empowered to fix and establish such rules and regulations in accordance with the provisions of this act as may be necessary for its enforcement.

3. No person, firm, or corporation shall operate or conduct any slaughterhouse, abattoir, packing house, sausage factory, rendering plant, or place where animals are slaughtered for sale for human food or where animal carcasses or parts thereof are prepared for human food, unless a license, for which no charge shall be made, has first been issued by the dairy and food commissioner to the owner, operator or manager of such establishment, authorizing said person, firm, or corporation to operate and conduct a slaughterhouse, abattoir, packing house, sausage factory, rendering plant or other similar business, and no person shall conduct or operate any such establishment or business after the revocation of such license, and the said dairy and food commissioner is hereby authorized and empowered to cause inspections to be made of every building, premises, or place in or upon which animals are slaughtered for human food, or animal carcasses, or parts thereof, are prepared for human food, and to grant licenses for the operation of the same whenever, in the judgment of the said commissioner, the business conducted in or upon said building, premises, or place, is managed in a sanitary manner and in accordance with the requirements of the law and of the rules and regulations provided in section 1 of this act, and of such rules and regulations as may be adopted as provided in section 2 of this act, and whenever, in his judgment, such building, premises or place, and the surroundings, are suitable for the proper sanitary operation of a slaughterhouse, abattoir, or other similar business: *Provided*, That nothing in this act shall apply to established slaughterhouses, abattoirs, packing houses, sausage factories, rendering plants, or other similar establishments when such establishments are licensed and conducted under the rules and regulations of the United States Department of Agriculture: *And provided, further*, That the provisions of this act shall not apply to the preparation or occasional sale of meat or meat

food products from animals raised by the farmer offering said products for sale, provided the said products are sound and wholesome.

4. Every license issued under the provisions of this act may be revoked by the dairy and food commissioner if the provisions of this act have been violated and the holder of such license has been convicted thereof, and every person, firm, or corporation who shall violate any of the provisions of this act or who shall conduct or operate a slaughterhouse, abattoir, packing house, sausage factory, rendering plant or other place where animals are slaughtered for sale for human food, or where animal carcasses or parts thereof are prepared for human food in violation of the provisions of this act, or who shall conduct or operate any such establishment without holding a license as herein specified, or who shall slaughter animals for sale for human food without holding a license, as herein specified, shall be guilty of a misdemeanor, and upon conviction shall be punished by a fine of not less than \$25 nor more than \$300 and costs of prosecution.

**Maternity Hospitals and Children's Boarding Houses—License Required—
Placing of Infants—Reports. (Ch. 436, Act Mar. 21, 1916.)**

1. That an act entitled an act to require the licensing and adequate inspection and supervision of persons and corporations conducting maternity hospitals and lying-in asylums and of persons receiving, boarding, and keeping children not relatives; prescribing rules for placing out and for reports; penalty, approved February 20, 1912, be amended and reenacted so as to read as follows:

SECTION 1. That any person or corporation not being superintendent of the poor that erects, conducts, establishes or maintains in this State a maternity hospital or lying-in asylum where females may be received, cared for, or treated during pregnancy or during or after delivery, or receives, boards, or keeps any children not relatives under 17 years of age without legal commitment shall, on and after the passage of this bill, obtain, on the recommendation of the State board of charities and corrections, a license to conduct said business from the local board of health of the city or county in which said business is carried on or in which such children are boarded or kept.

SEC. 2. No infant delivered in any lying-in asylum in this State shall be placed out by the mother while an inmate of said lying-in asylum, or within one month after leaving said asylum, or by any other person whatever, except upon the approval of the superintendent, or other person in charge of said asylum, and of the local health officer.

SEC. 3. Where arrangements for the placing out of an infant whose mother is an inmate of any lying-in asylum in this State are made by any person other than the superintendent of said asylum, said superintendent shall be held responsible for the proper placing of said infant as if the arrangements had been personally made by said superintendent.

SEC. 4. Every superintendent or other person in charge of any lying-in asylum or maternity home, or other institution in this State where females may be received, cared for, or treated during pregnancy, or during or after delivery, shall report in writing to the local health officer on forms furnished by said health officer every birth, admission, death, and discharge occurring in or from said lying-in asylum, maternity home, or other institution, within 24 hours, and duplicates of said report shall be sent to the State board of charities and corrections.

SEC. 5. Every report of such birth, admission, death, or discharge shall give the full name of the infant and parents, so far as these can be obtained, and said information shall be regarded as confidential, and permanent record shall be made of same.

SEC. 6. Any person or corporation who shall willfully violate any of the provisions of this act shall be guilty of misdemeanor, and upon conviction thereof shall be punished by a fine of not less than \$25 nor more than \$100 for each offense.

Alcohol and Drug Addicts—Commitment. (Ch. 357, Act Mar. 20, 1916.)

1. That any person who through use of alcoholic liquors or habit-forming drugs has become dangerous to the public or himself, or unable to care for himself or his property or family, or has become a burden on the public, his family or any other person, shall, upon complaint of any person, be brought before a commission of lunacy in the same manner and under the same process as is provided by law for commissions of lunacy, and if said person shall be found by said commission to be in the condition above mentioned such person shall be committed to one of the State hospitals for the insane, to be kept and held there until the authorities of that institution shall declare such person cured and restored to his normal condition, when he shall be discharged or paroled, as may seem proper to the authorities of said institution.

2. Every person committed under this act who has property in amount in excess of the homestead and other exemptions to which he or she is entitled shall be liable to the Western State Hospital, for the purpose of covering expenses and treatment, at the rate of \$25 per month while detained there.

Domestic Animals—Disposal of Dead Bodies. (Ch. 427, Act Mar. 21, 1916.)

1. That an act to amend and reenact an act entitled an act to amend and reenact section 2197 of the Code of Virginia, in relation to burial of hogs that die from disease, as amended and reenacted by an act approved March 30, 1890, and by an act approved February 1, 1896, so as to require the cremation or burial of all animals or fowls that die from contagious or infectious diseases, and fixing penalties for violation, approved March 15, 1904, making the act apply to animals or fowls dying from any disease, as amended by an act approved January 30, 1912, be amended and reenacted so as to read as follows:

SEC. 2197. The owner of any animal or grown fowl which has died from any disease shall forthwith cremate or cause to be cremated or bury or cause to be buried the body of such animal or grown fowl, and if he fails to do so, any justice, after notice to the owner, if he can be ascertained, shall cause any such dead animal or fowl to be cremated or buried by a constable, or other person designated for the purpose, and the constable or other person shall be entitled to recover of the owner of every such animal so cremated or buried a fee of \$5, and of the owner of every such fowl so cremated or buried a fee of \$1, to be recovered in the same manner as officers' fees are recovered, free from all exemptions in favor of such owner. Any person violating the provisions of this act shall be guilty of a misdemeanor, and shall be subject to a fine of not exceeding \$20 for each offense.

2. This act shall not apply to any county until the board of supervisors shall adopt the same.

Advertisements—Untrue, Deceptive, or Misleading, Prohibited. (Ch. 42, Act Feb. 17, 1916.)

1. That any person, firm, corporation, or association, or any agent thereof who, with intent to sell or in any wise dispose of merchandise, securities, service, or anything offered by such person, firm, corporation, or association, directly or indirectly, to the public for sale or distribution, or with intent to increase the consumption thereof, or to induce the public in any manner to enter into any obligation relating thereto, or to acquire title thereto, or any interest therein, with fraudulent intent makes, publishes, disseminates, circulates, or places before the public, or causes directly or indirectly to be made, published, disseminated, circulated, or placed before the public in this State in a newspaper or other publications, or in the form of a book, notice, handbill, poster, blue print, map, bill, tag, label, circular, pamphlet, or letter, or in any other way, an advertisement of any sort regarding merchandise, securities, service, land, lot, or anything so offered to the public, which advertisement contains any promise, assertion, representation or statement of fact which is untrue, deceptive, or misleading shall be guilty of a misdemeanor, and upon conviction thereof be punished by a fine of not less than \$25 nor more than \$250 or confined in jail for a period of not less than 10 days nor more than 60 days, or by both such fine and imprisonment.

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